Presentation of 2016 SCRS Meeting Results and Advice

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Southeast Fisheries Science Center

2016 Fall Meeting of the

Advisory Committee to the U.S. Section to the

International Commission for the Conservation of Atlantic Tunas

October 13ᵗʰ-14ᵗʰ 2016   Silver Spring, MD

Western Atlantic Bluefin Tuna

Western Bluefin Highlights

- WBFT Catch in 2015 was 1,839 t (including discards)

- Last stock assessment was in 2014

- 6 of the 8 abundance indices were updated through 2015

- the 2014 projections were updated by replacing the assumed catches for 2014 and 2015 (=TAC) with the actual values (< TAC)

- The 2016 projections for wBFT indicated only slight changes in predicted SSB and F from the 2014 projections.

- The SCRS concluded that no change was warranted to the advice provided in 2014

- Next stock assessment planned for 2017

DATA PREPARATORY WORKSHOP
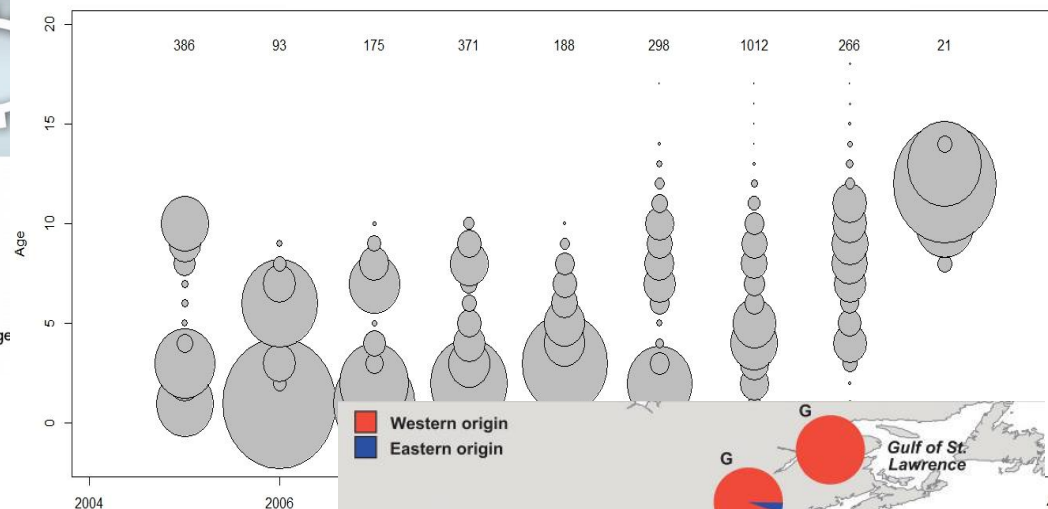
New data, new questions and new debates!

Stock and Age-length keys!

SCIENTIFIC REPORTS

OPEN

Sexual maturity in western Atlantic bluefin tuna

SUBJECT AREAS:
ICHTHYOLOGY
REPRODUCTIVE BIOLOGY

Gilad Heinisch[1,2], Hanna Rosenfeld[3], Jessica M. Knapp[1,2], Hillel Gordin[3] & Molly E. Lutcavage

Discovery of a spawning ground reveals diverse migration strategies in Atlantic bluefin tuna (*Thunnus thynnus*)

David E. Richardson[a,1], Katrin E. Marancik[b], Jeffrey R. Guyon[c], Molly E. Lutcavage[d], Benjamin Galuardi[e,f], Chi Hin Lam[d], Harvey J. Walsh[a], Sharon Wildes[c], Douglas A. Yates[c], and Jonathan A. Hare[a]

[a]Northeast Fisheries Science Center, National Marine Fisheries Service, National Oceanic and Atmospheric Administration, Narragansett, RI 02882; [b]Integrated Statistics, Contractor for Northeast Fisheries Science Center, National Marine Fisheries Service, National Oceanic and Atmospheric Administration, Narragansett, RI 02882; [c]Alaska Fisheries Science Center, National Marine Fisheries Service, National Oceanic and Atmospheric Administration, Juneau, AK 99801; [d]Large Pelagics Research Center, School for the Environment, University of Massachusetts Boston, Gloucester, MA 01931; [e]School of Marine Science and Technology, University of Massachusetts Dartmouth, Fairhaven, MA 02719; and [f]Greater Atlantic Regional Fisheries Office, National Marine Fisheries Service, National Oceanic and Atmospheric Administration, Gloucester, MA 01930
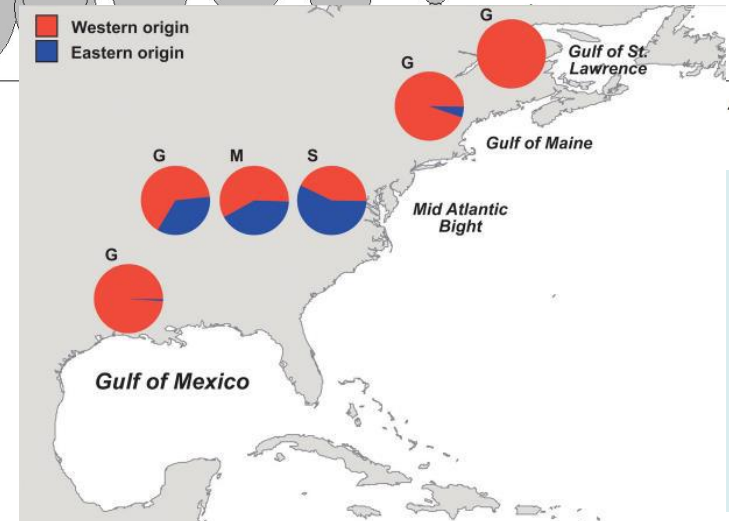
DATA PREPARATORY WORKSHOP

Promising new abundance indices are being developed for the 2017 data preparatory meeting :

- A combined U.S.-Canada pelagic longline observer index for the Northwest Atlantic.

- A combined Canada-U.S. rod and reel, handline, and harpoon index

- Joint Canada, Japan, Mexico and USA longline index covering the entire northwestern Atlantic
  - Workshop held 2016 and another planned for early 2017
  - Represents a major collaborative effort of the CPCs involved
  - Initial analysis suggests that it may be possible to combine some or all of the datasets into a multi-fleet index with broad temporal and spatial coverage.

- A fishery independent index based on BFT observations in the Gulf of St Lawrence herring acoustic survey (1994-2015) that shows consistent trends with the corresponding fishery dependent index but with a less-rapid increase after 2009.

BFT-WEST Atlantic stock (Task-I) total catch & TAC's
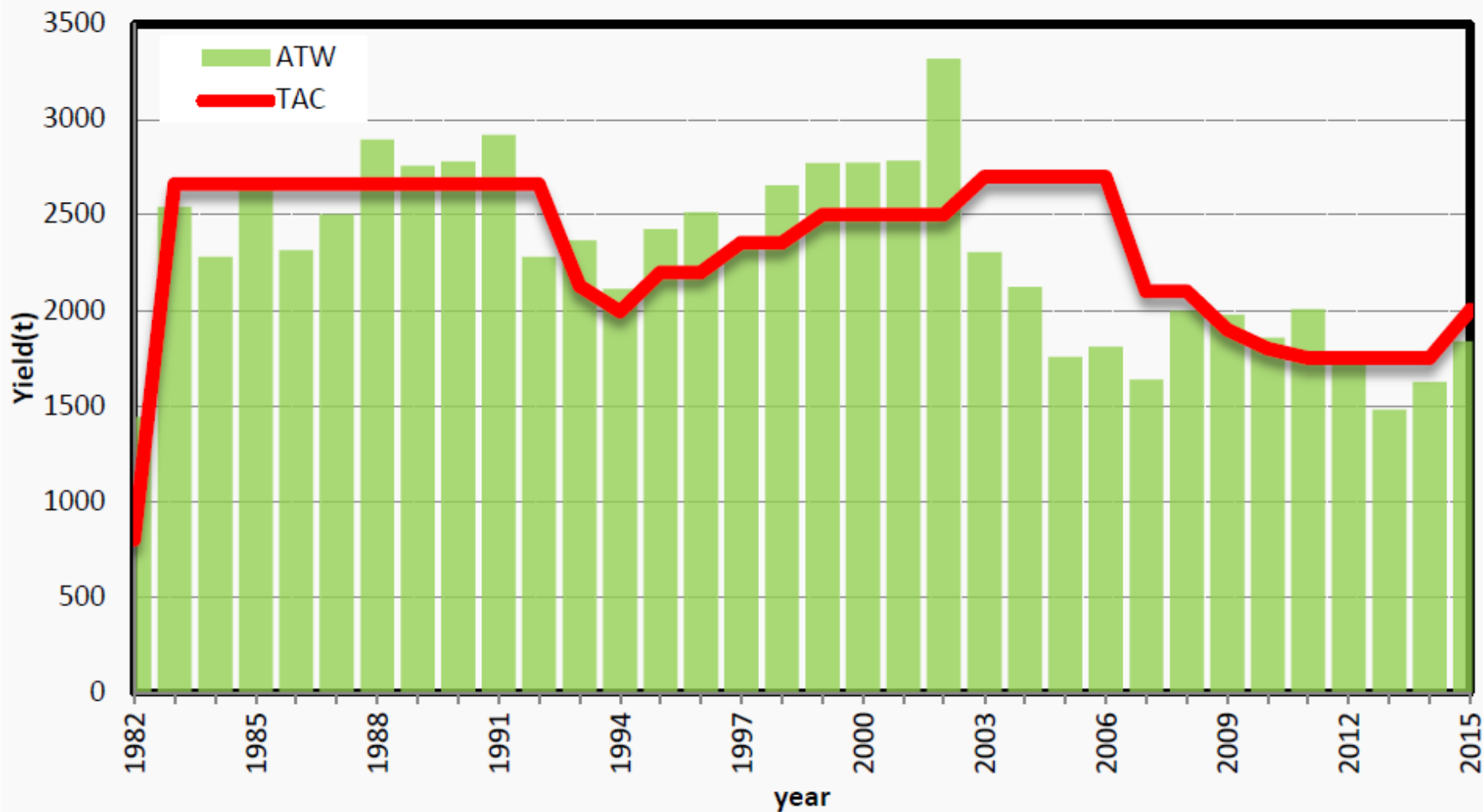
Most of the updated abundance indices show recent declines
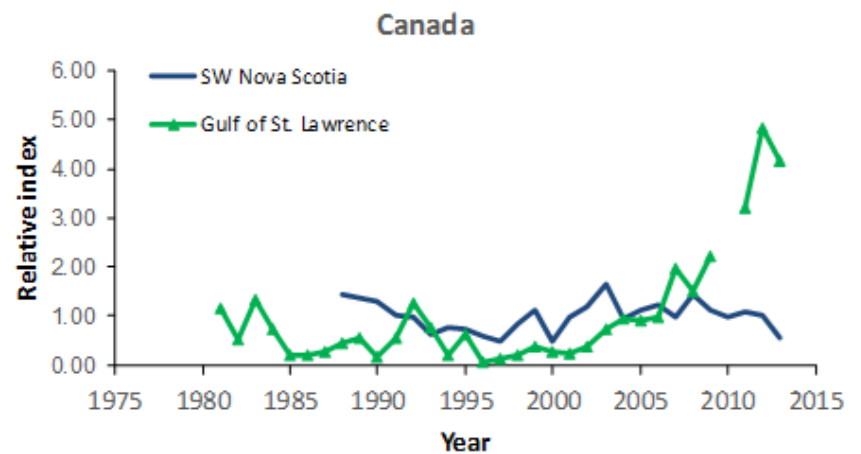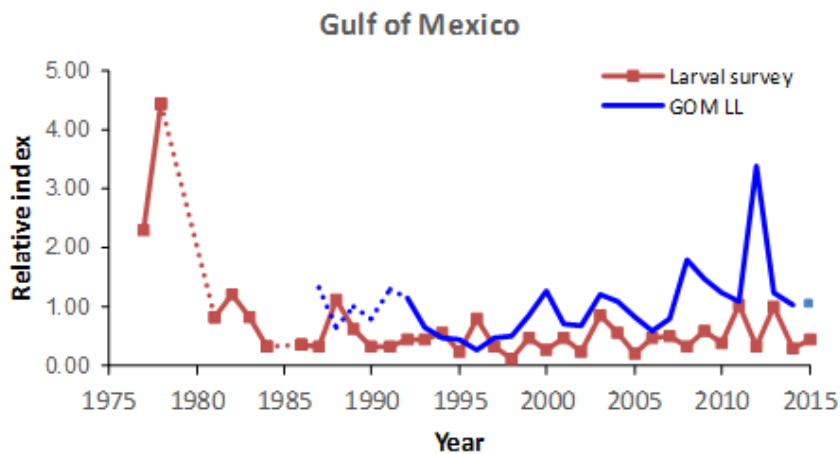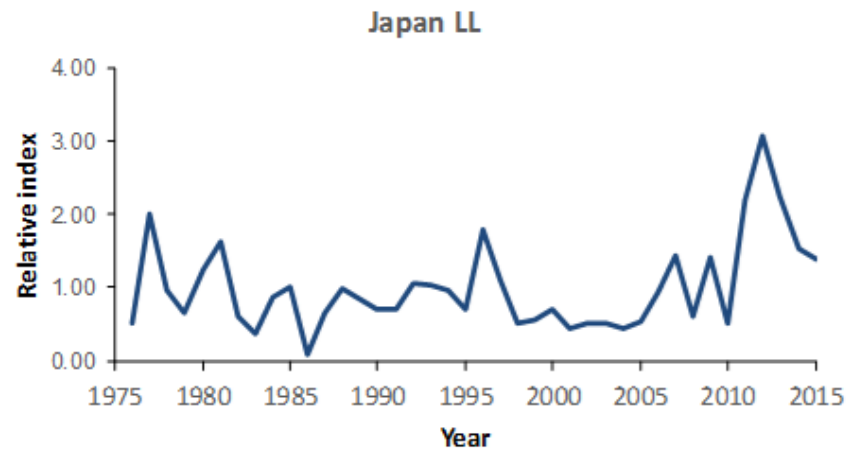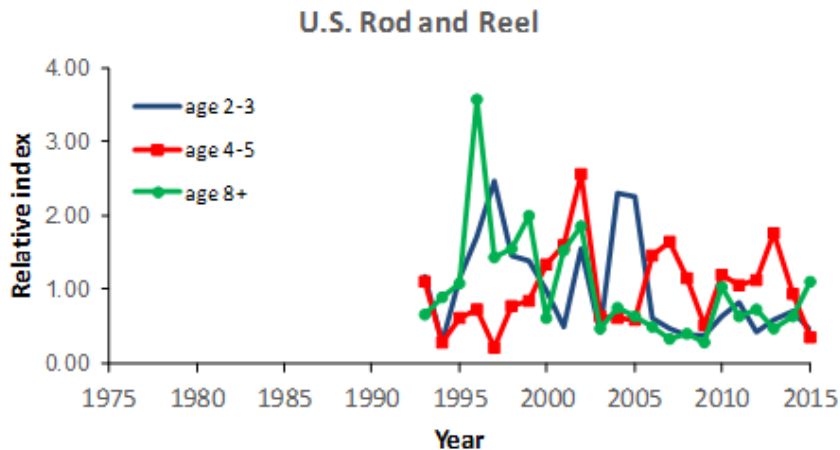
Stock Status for 2013 Unchanged (no new assessment)

WEST ATLANTIC BLUEFIN TUNA SUMMARY
**(Catches and Biomass in t)**

| Current (2014) Catch (including discards)		1,626 t
Assumed recruitment	Low potential	High potential
Maximum Sustainable Yield (MSY)	3,050 (2807-3307)[1]	5,316 (4,442-5863)[1]
SSB_{MSY}	13,226 (12,969-13,645)[1]	63,102 (50,096-72,921)
SSB_{2013}/SSB_{MSY}	2.25 (1.92-2.68)[1]	0.48 (0.35-0.72)[1]
F_{MSY}	0.20 (0.17-0.24)[1]	0.08 (0.07-0.10)[1]
$F_{0.1}$	0.12 (0.11-0.13)[1]	0.12 (0.11-0.13)[1]
$F_{2010-2012}/F_{MSY}$[2]	0.36 (0.28-0.43)[1]	0.88(0.64-1.08)[1]
$F_{2010-2012}/F_{0.1}$	0.60 (0.50-0.72)[1]	0.60 (0.50-0.72)[1]
Stock status	Overfished: NO	Overfished: YES
	Overfishing: NO	Overfishing: NO

UPDATED OUTLOOK

2016 projections with updated catches slightly higher than indicated in 2014 because realized catches in 2014-2015 < TAC

50% Probability
Low Recruitment

50 % Probability
High Recruitment
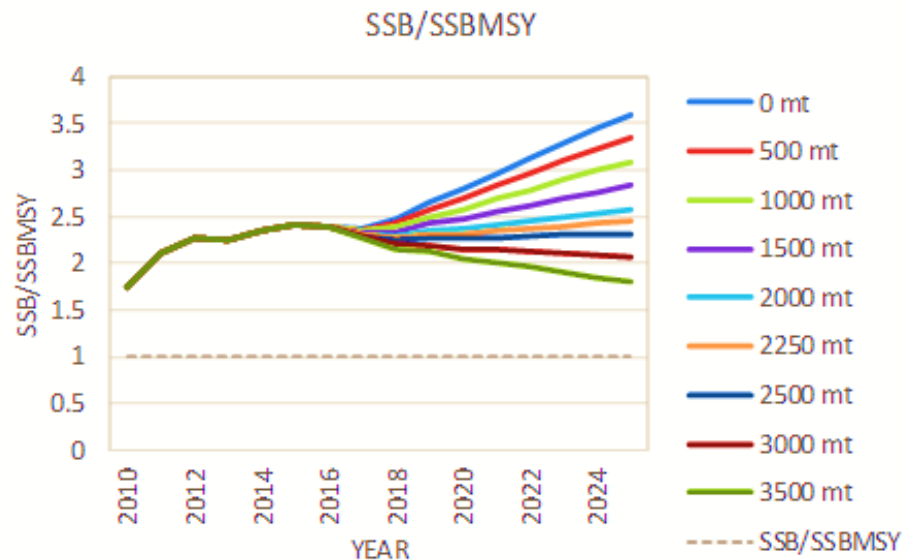
Low recruitment scenario suggests stock is above MSY. Catches of less than 2,250 t are estimated to allow SSB to be at or above 2014 levels by 2019 (with 50% probability)
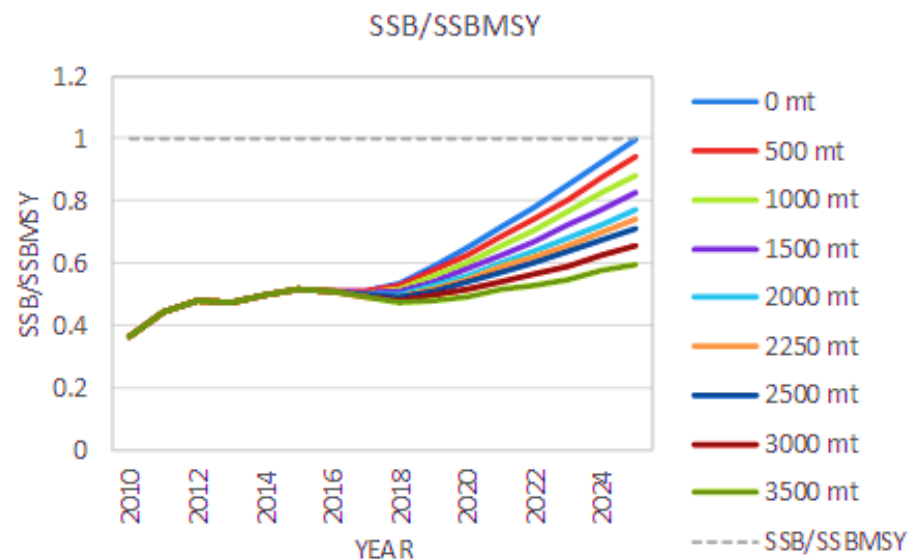
The high recruitment potential scenario suggests the stock will not achieve MSY levels by 2019 even with no catch, although catches less than 2,500 t are predicted to prevent overfishing.

Stock Status for 2015
(based on updated projections)

	Low Potential	High Potential
SSB_{2015}/SSB_{MSY}	2.41 (2.05-2.96)	0.48 (0.35-0.72)
$F_{2013\text{-}2015}/F_{MSY}$[1]	0.28 (0.22-0.36)	0.68 (0.37-0.78)
$F_{2013\text{-}2015}/F_{0.1}$[1]	0.48 (0.40-0.58)	0.48 (0.40-0.58)

[1] $F_{2013\text{-}2015}$ refers to the geometric mean of the estimates for 2013-2015 (a proxy for recent F levels).

Estimates of the fishing mortality and the spawning stock biomass relative to the reference point and 80% confidence interval using the updated projections

NOTE: These estimates are NOT from an updated stock assessment that would use updated CPUE, age composition, and other information.

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Management recommendations

- The SCRS still not in the position to favor either the high or low recruitment potential (suggests moving away from that dichotomy)

- The SCRS considered that the new information received this year did not necessitate any change to the advice given last year regarding the implications of various catch levels

- The SCRS noted the projections suggested an increase in SSB for 2014-2015, but most of the indices for large fish decreased (implying the projections may be overly optimistic)

Eastern Atlantic Bluefin Tuna

Eastern Bluefin Highlights

- EBFT Catch in 2015 was 16,201 t, slightly higher than TAC (16,142 t)

- The 2014 projections were updated with actual 2014 and 2015 catches

- Only possible to update Japan longline and Morocco trap indices

- Indices difficult to update due to changing regulations and fishing practices

- 2016 eBFT projections indicated only slight changes in SSB and F

- Projections may be overly optimistic due to high and unconfirmed 2004-2007 recruits and recent decline in indices

- New assessment planned for 2017, potential new indices (aerial survey larval index), revised catch at size
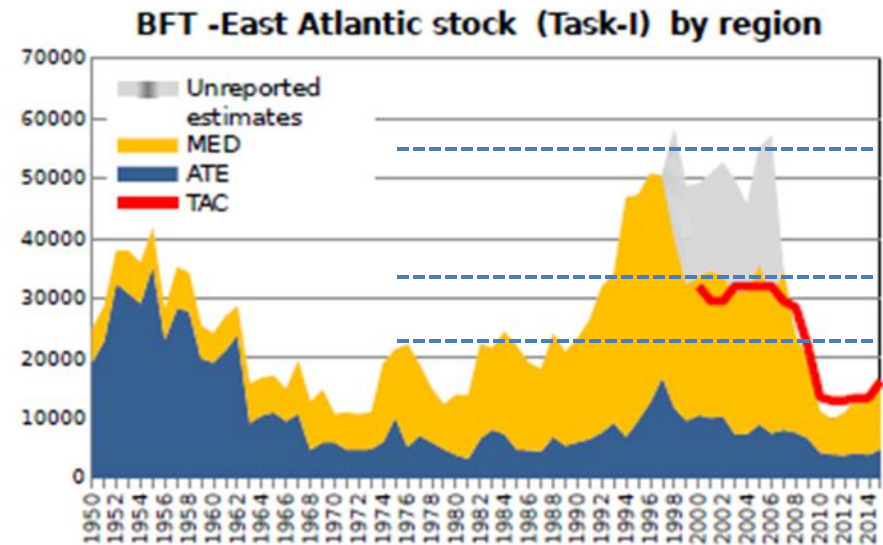
EBFT Landings and TAC

Decrease from mid- 2000s due to rebuilding plan and enforcement.

	CATCH	TAC
2012:	10,934 t	12 900 t
2013:	13,244 t	13 400 t
2014:	13,250 t	13 400 t
2015:	16 201 t	16 142 t
2016:		19 296 t
2017:		23 155 t

MSY (dashed lines):

23,000 t (low)

33,600 t (med)

55,900 t (high)

BFT -East Atlantic stock (Task-I) by region

BFT -EAST Atlantic stock (Task-I) by major gear
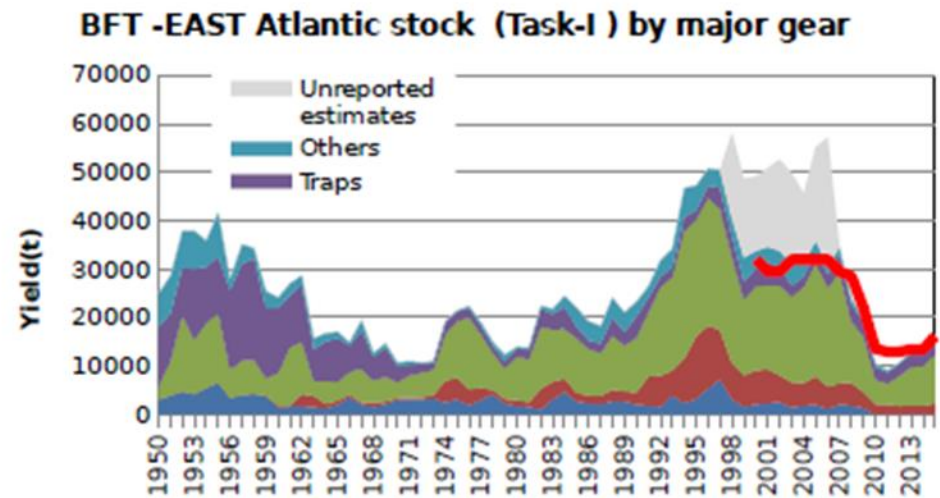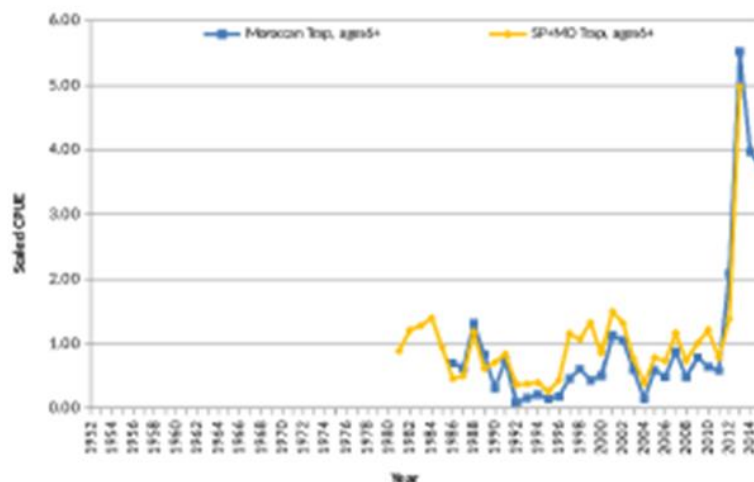
Fishery Trends and Indicators

Spanish Bait boat in the Bay of Biscay (East Atlantic)
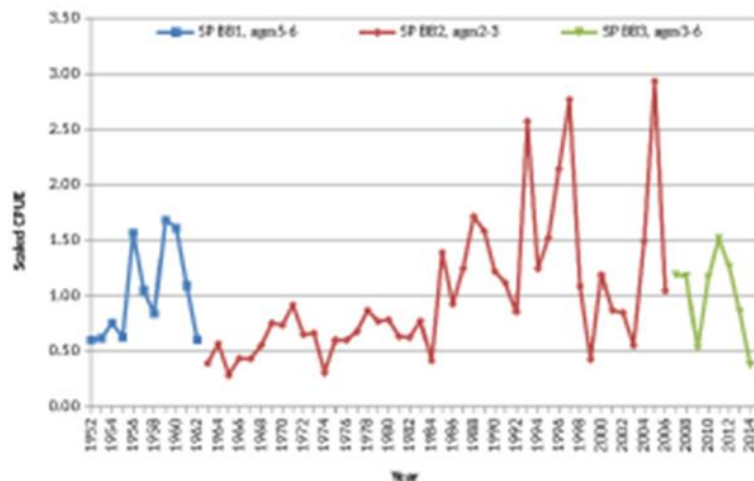
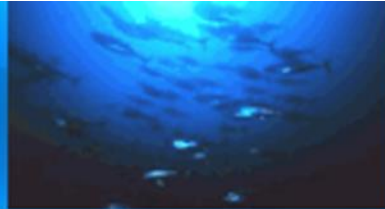Japanese Longline (N_East Atl. & E_Atl. and Med.)
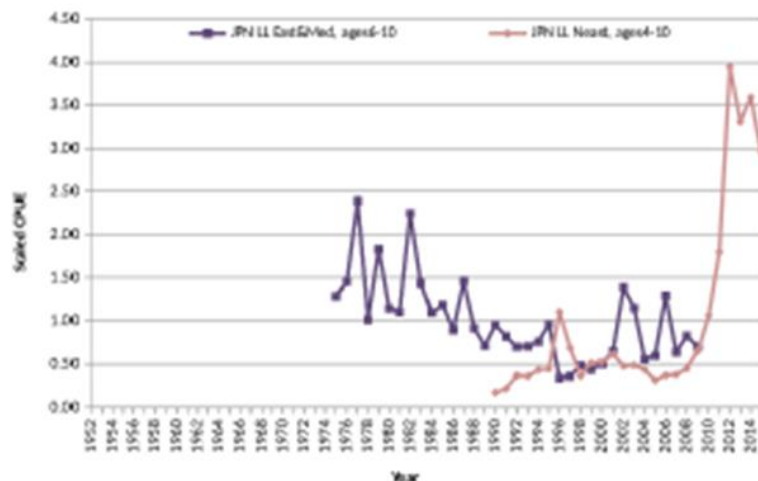
Moroccan & Spanish Traps (East Atlantic)
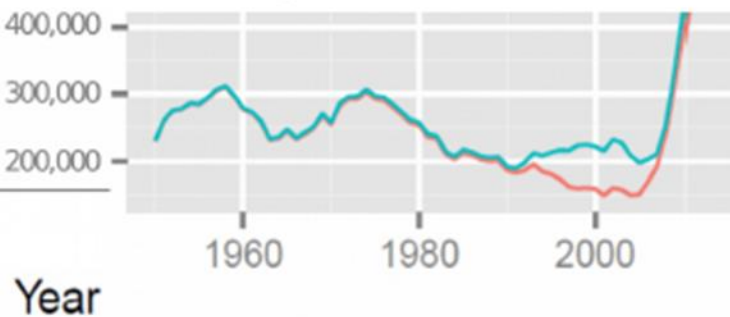

Norwegian Historical Purse Seine (East Atlantic)
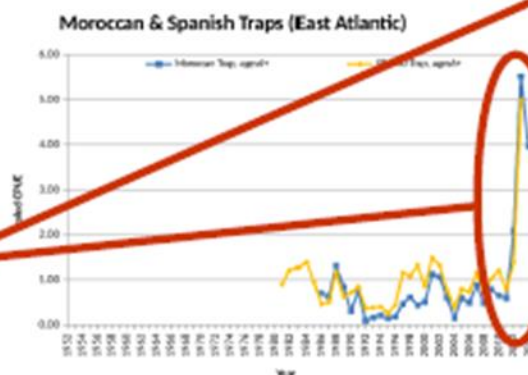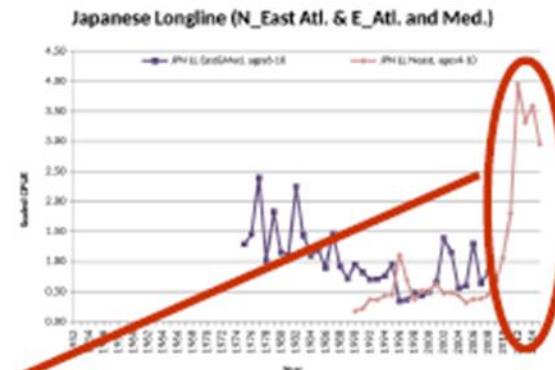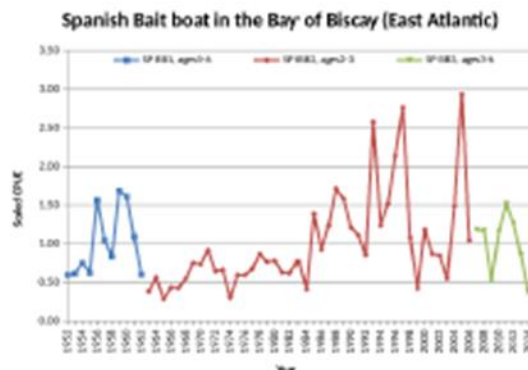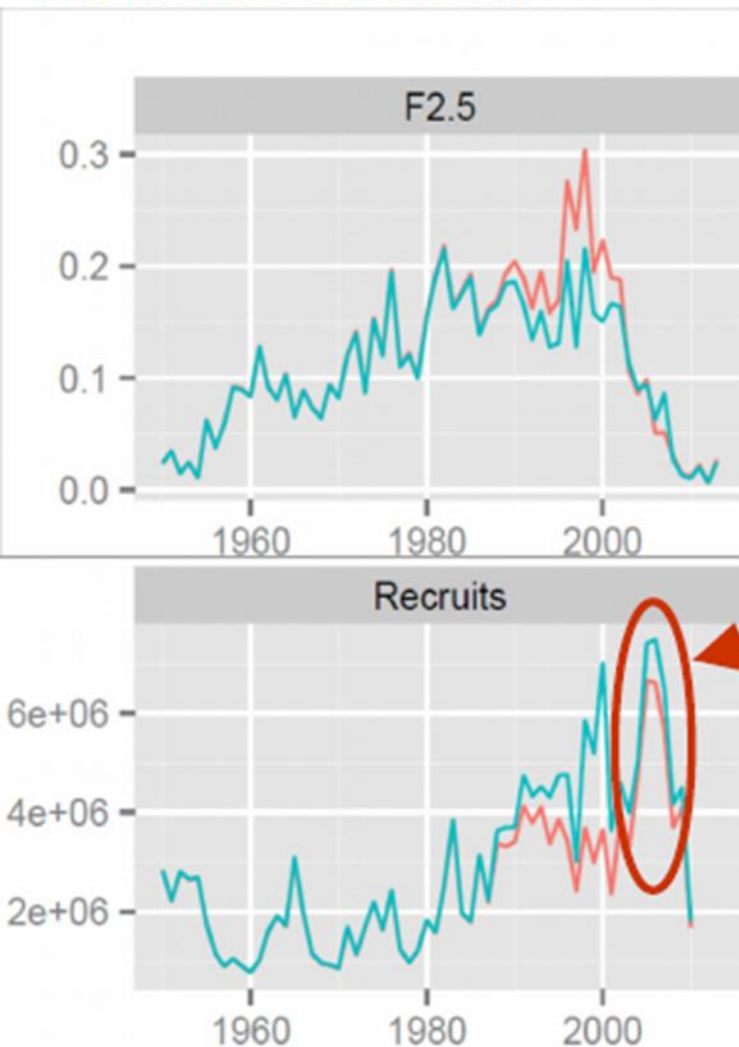
State of the stock

Stock Status for 2013 Unchanged
## (no new assessment)

The stock status has significantly improved since 2012, as $F_{2013} < F_{0.1}$

- $F_{2013}/F_{0.1} = 0.40$ (reported)
- $F_{2013}/F_{0.1} = 0.36$ (inflated)

and SSB is most likely above the level expected at $F_{0.1}$

- $SSB_{2013}/SSB_{F0.1} = 1.10$ (reported)
- $SSB_{2013}/SSB_{F0.1} = 1.11$ (inflated)

Those ratios depend on:
(*i*) the selectivity patterns,
(*ii*) total catch,
(*iii*) mean recruitment levels (more pessimistic for high recruitment (0.55) than low recruitment (1.74)
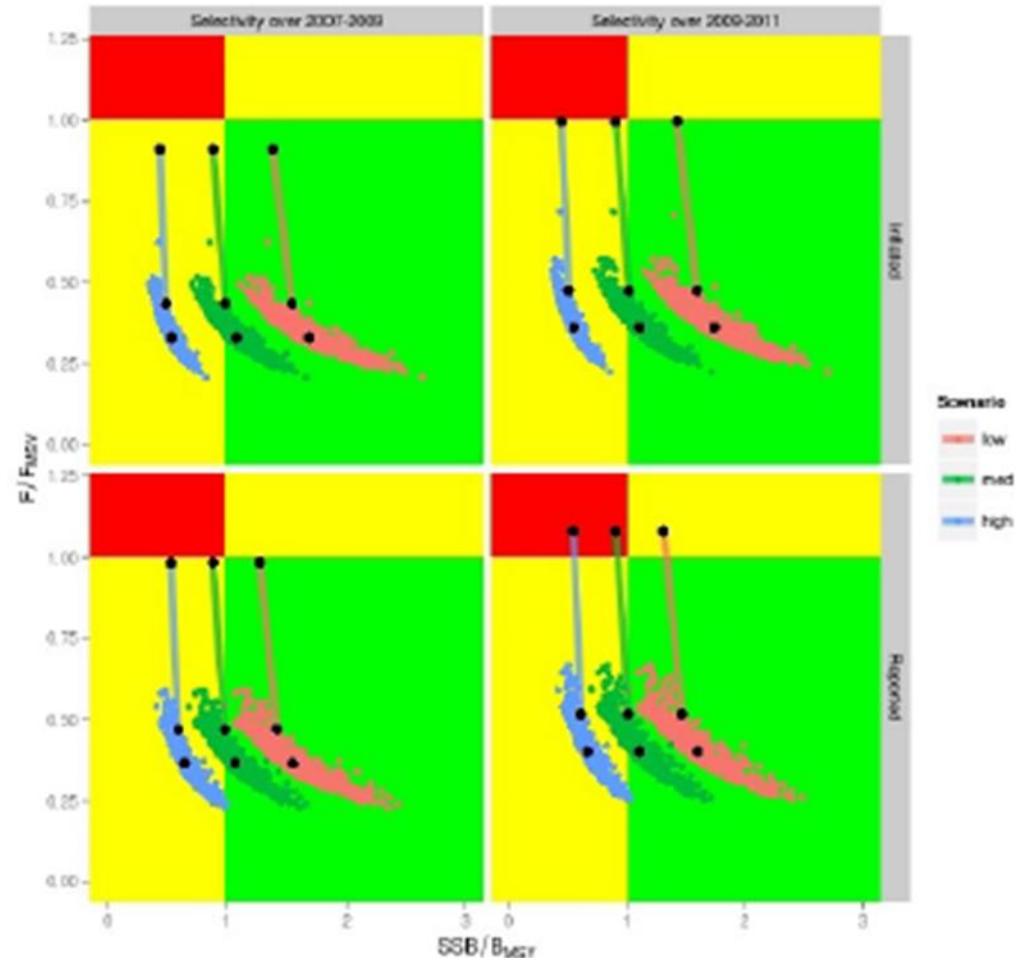
State of the stock

Simple update of projections with realized 2014 and 2015 catch

	Reported		Inflated	
	Projected 2015 status	2013 status	Projected 2015 status	2013 status
$F/F_{0.1}$	0.37	0.4	0.33	0.36
$SSB/SSB_{F0.1}$				
Low recruitment	1.83	1.6	1.98	1.74
Medium recruitment	1.29	1.1	1.3	1.11
High recruitment	0.82	0.67	0.7	0.55

- Projections may be overly optimistic given declines in indices
- TAC (2016-2017) 19,296 t –23,155 t

2016 YELLOWFIN TUNA STOCK ASSESSMENT

Data Preparatory Meeting:
- March 7 to 11, 2016

Assessment Meeting:
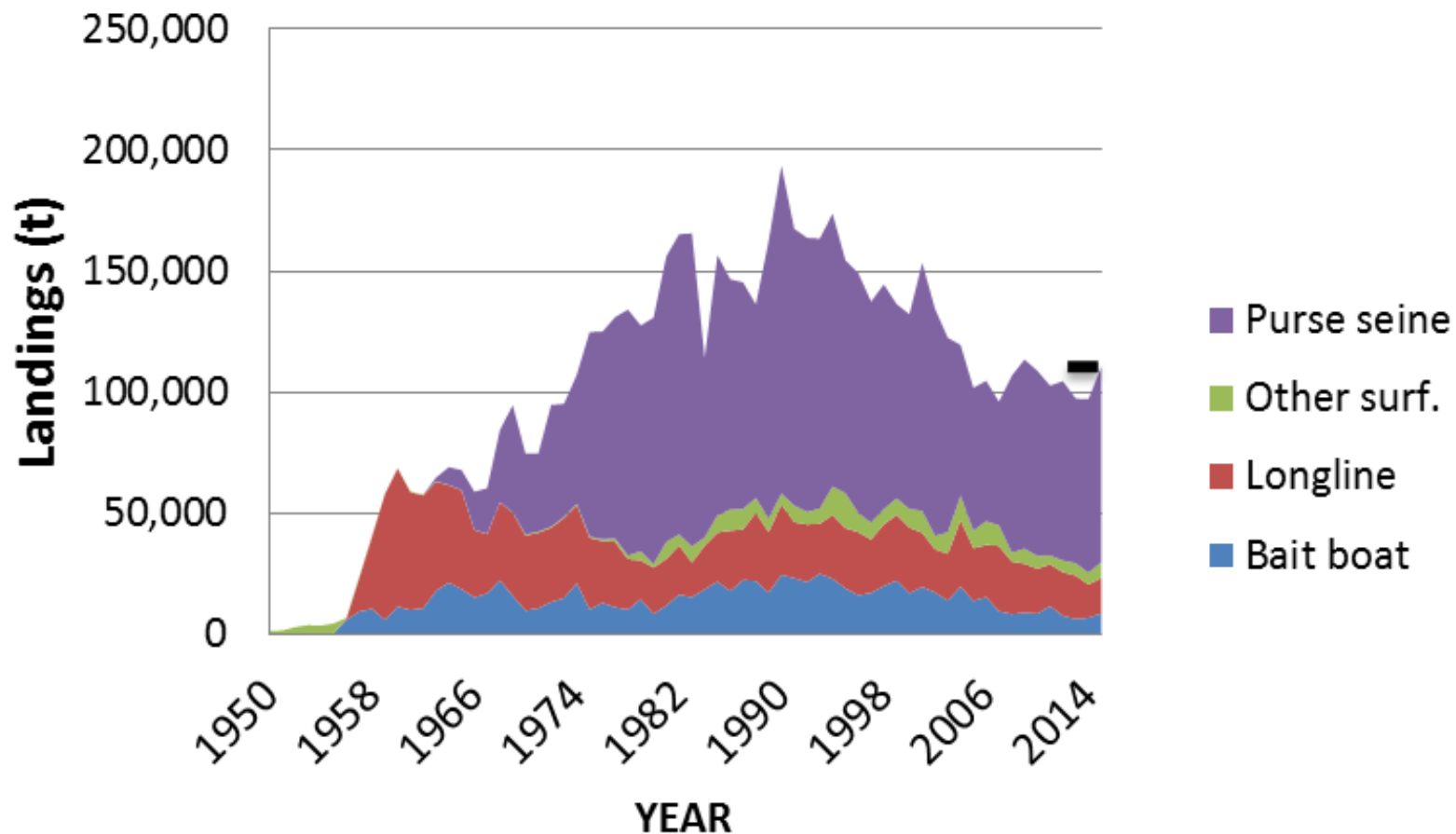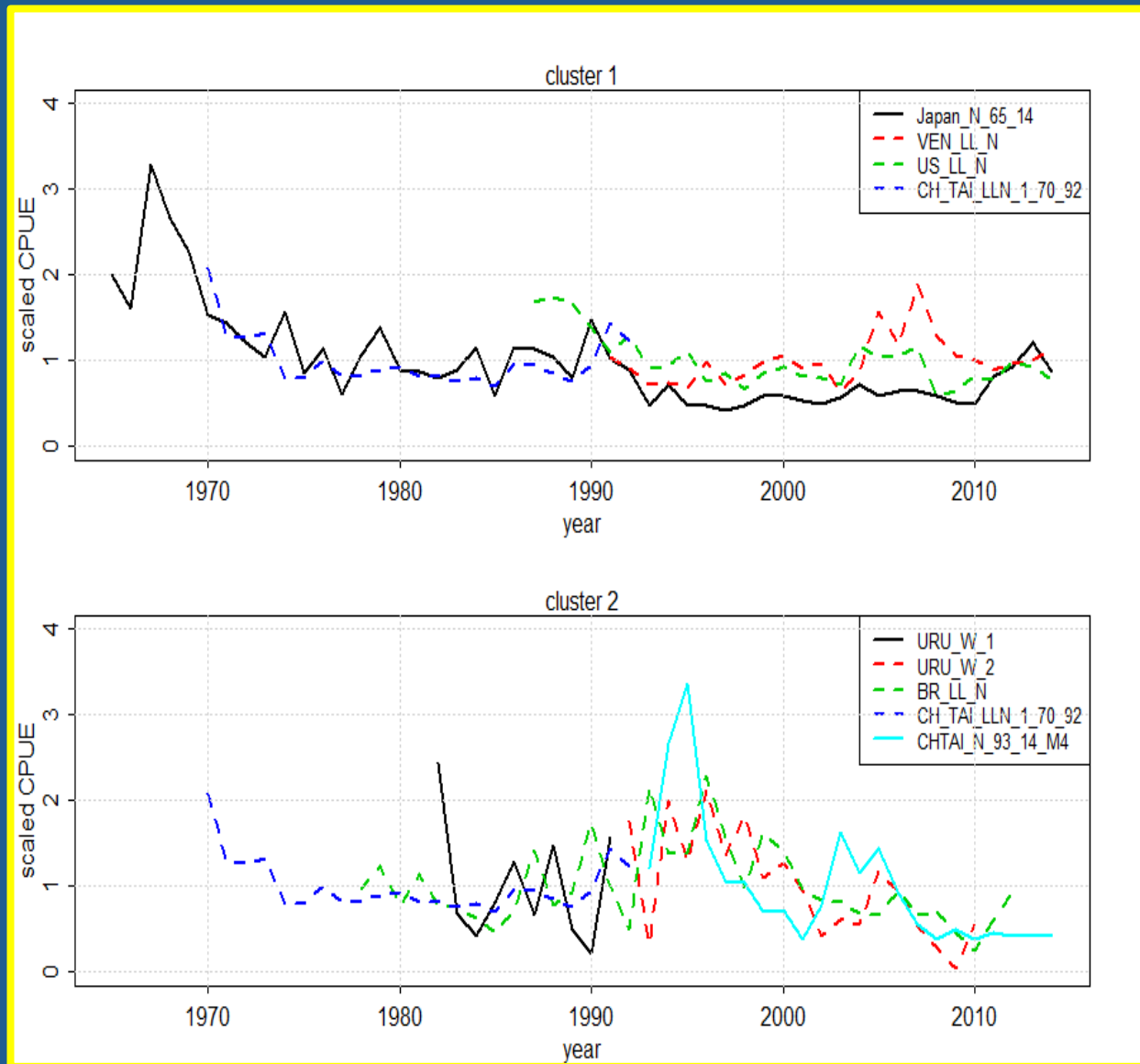- 27 June to 1 July 2016

YFT-Task 1

- Total Landings increased to 194,000 t by 1990, then decreased by nearly 50% to 109,810 t in 2015
- Since 2012, TAC = 110,000 t

- 8 LL indices met inclusion criteria (e.g. full documentation, evaluation of diagnostics).
- Two index "clusters" were identified - represents two hypotheses regarding trends in abundance.

Some notable changes to stock assessment:

- New maturity and natural mortality at age vectors calculated.

- Only longline abundance indices available

- Three age-structured models and a non-equilibrium surplus production model were applied to the available data through 2014.

- Two major sources of scientific uncertainty were examined:
    - use of index clusters that reflect two disparate trends in abundance
    - effect of alternative model structures and assumptions.

Stock Status

- For a given cluster, trends in B/B$_{MSY}$ were similar for all models, although small differences in current stock status were noted
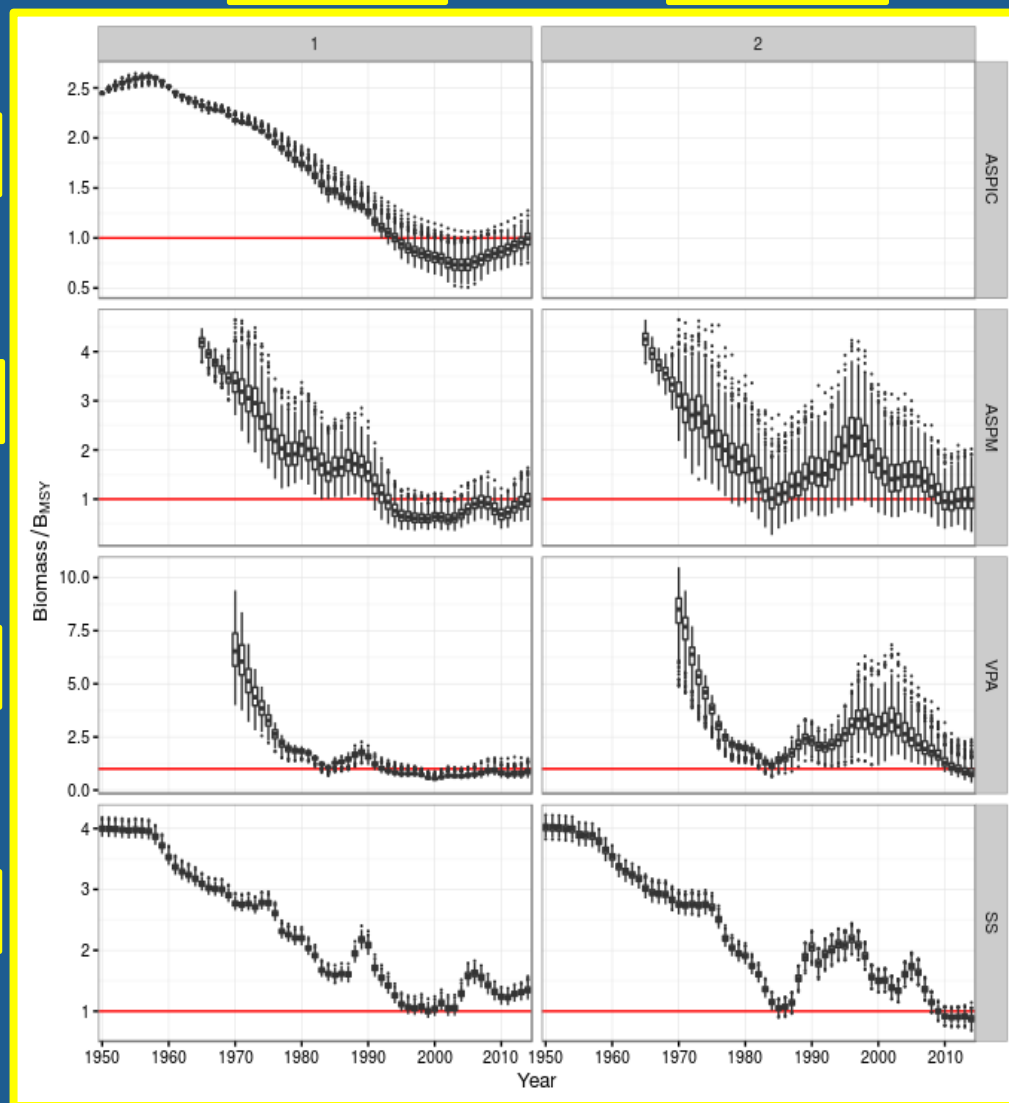

CLUSTER 1   CLUSTER 2

ASPIC

ASPM

VPA

SS

Stock Status

- For a given cluster, trends in F/F_{MSY} were similar for all models, although small differences in current stock status were noted
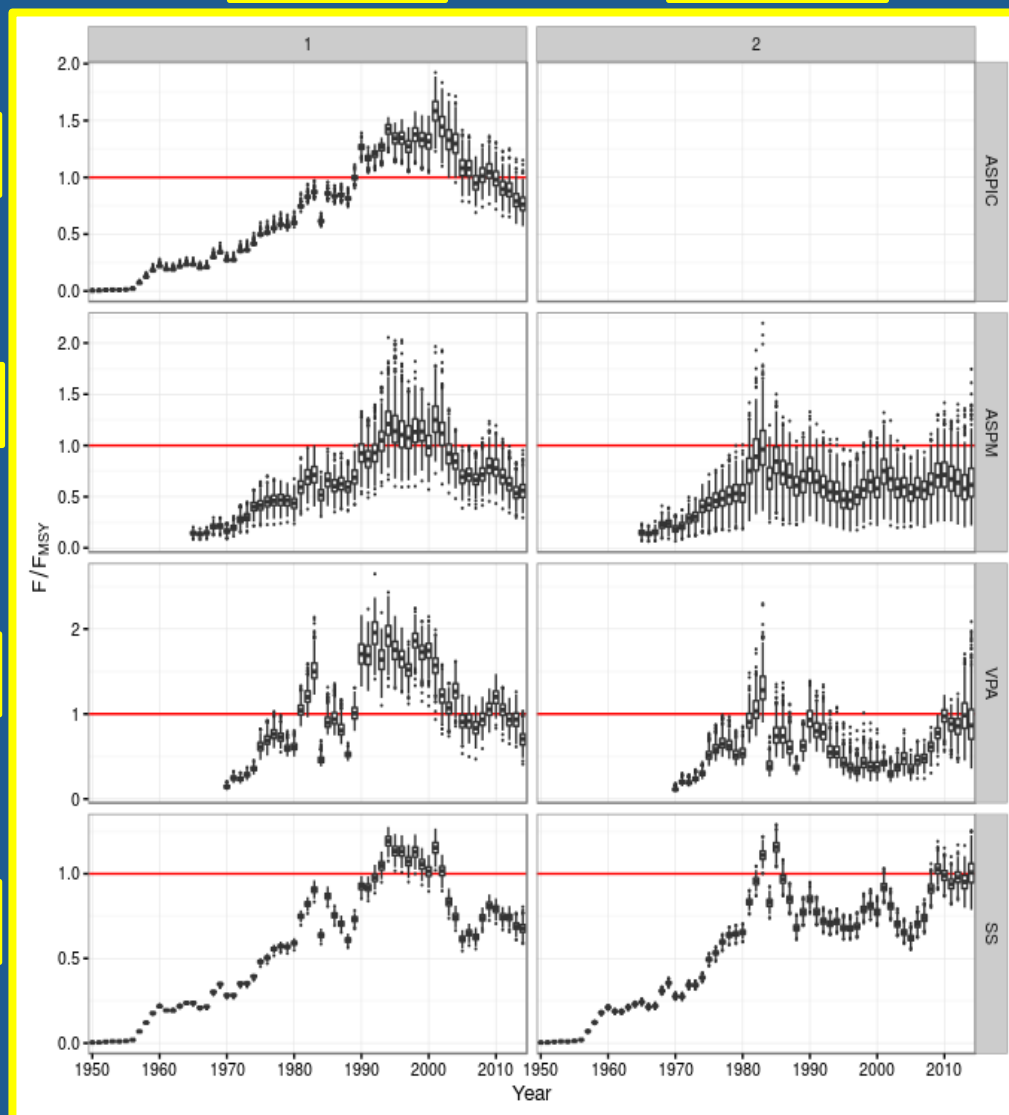
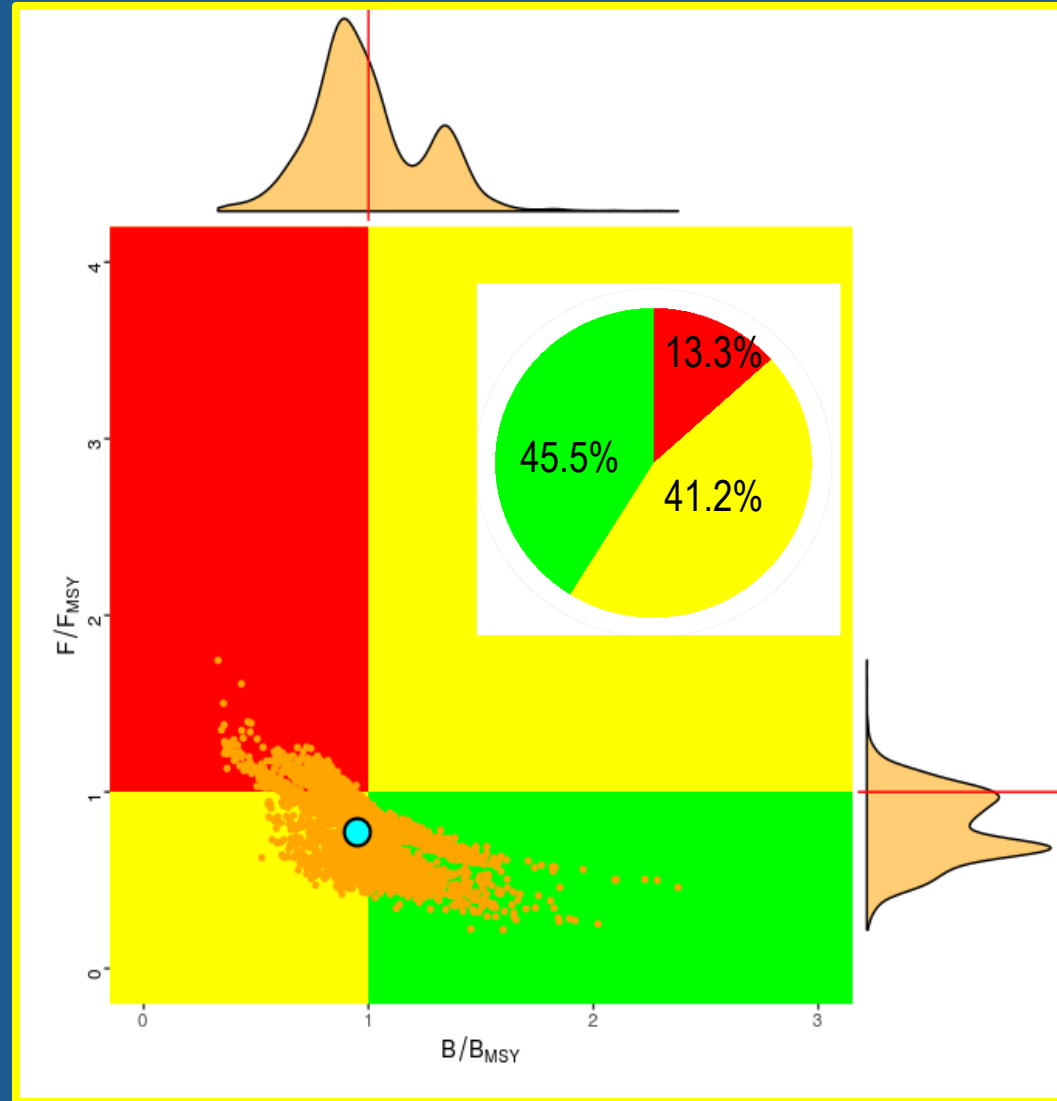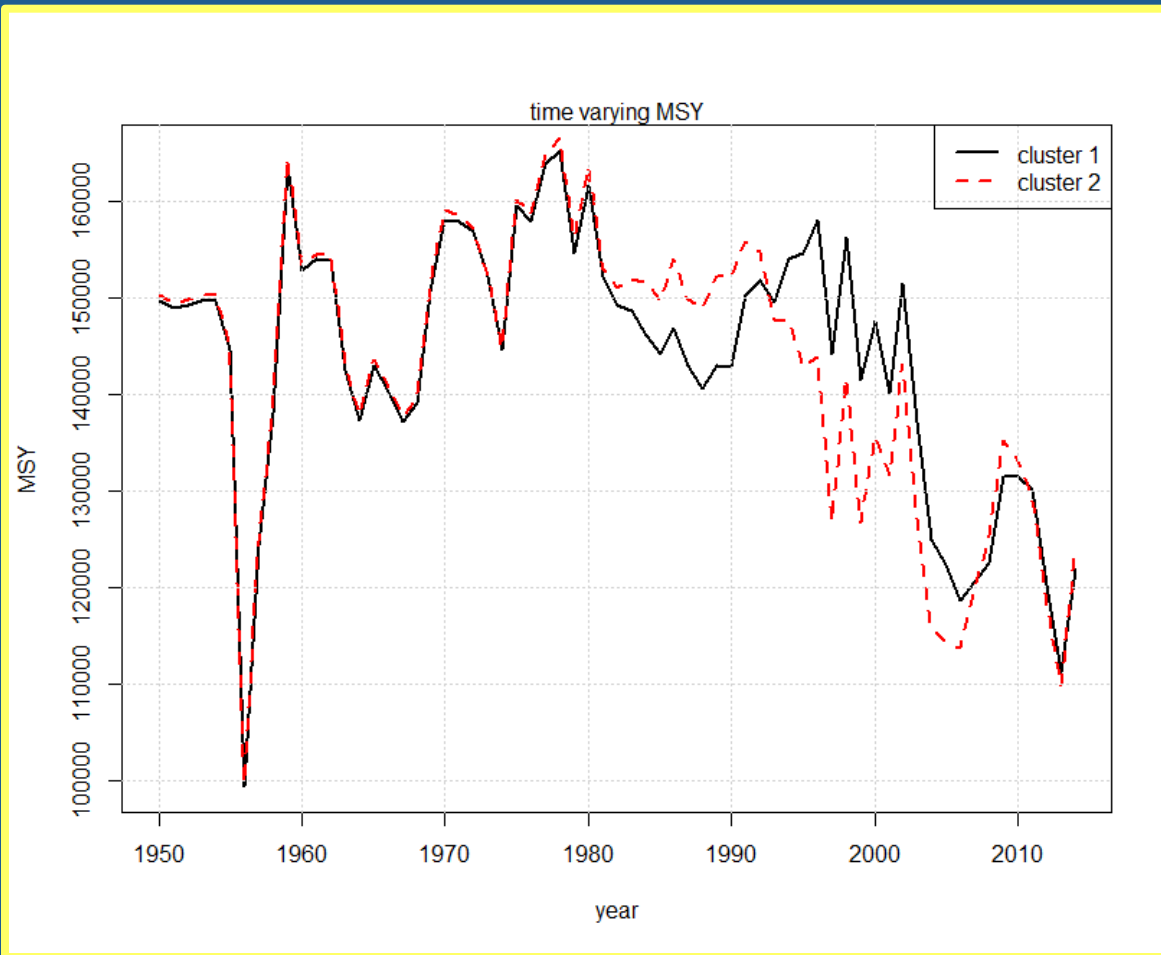- Combined 7 models, equally weighted.

- $B_{2014}/B_{MSY} = 0.95$
  $F_{2014}/F_{MSY} = 0.77$
  MSY = 126,000 t

- Overfished/Not Overfishing

Conditional MSY varies with Selectivity

time varying MSY

- Estimates of current MSY may be below what was achieved in past decades because overall selectivity has shifted to smaller fish since 1980s.

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Management Recommendations

- Maintaining the current TAC of 110,000 t maintains healthy stock status through 2024 with >68% probability, increasing to 97% by 2024.

- Similar to 2011; catches of 110,000 t would rebuild to, or maintain healthy stock status through 2017 with >64% probability, increasing to 77% by 2024.

Joint Probability that $B>B_{MSY}$ and $F<F_{MSY}$

TAC	2017	2018	2019	2020	2021	2022	2023	2024
60,000	75	91	99	99	99	99	100	100
70,000	74	87	97	99	99	99	99	99
80,000	73	86	96	99	99	99	99	99
90,000	71	82	91	97	99	99	99	99
100,000	70	80	89	92	96	97	99	99
110,000	68	78	85	90	92	95	96	97
120,000	65	73	79	78	79	80	82	82
130,000	57	59	61	61	57	54	50	48
140,000	45	44	38	33	31	31	31	30
150,000	31	24	21	20	19	20	20	20

Current TAC →

NOAA F

2016 ALBACORE STOCK ASSESSMENT

North Atlantic Albacore
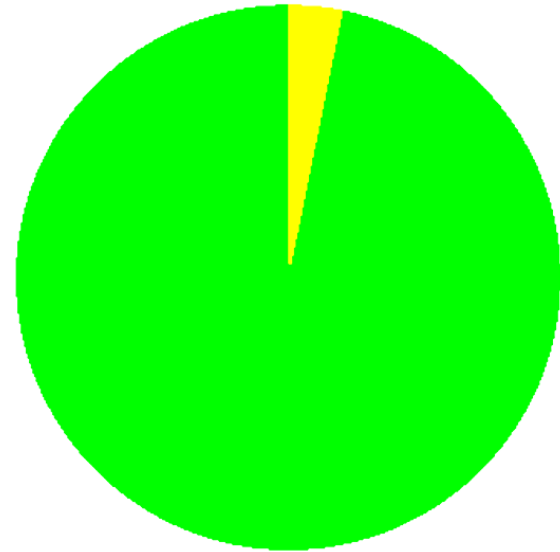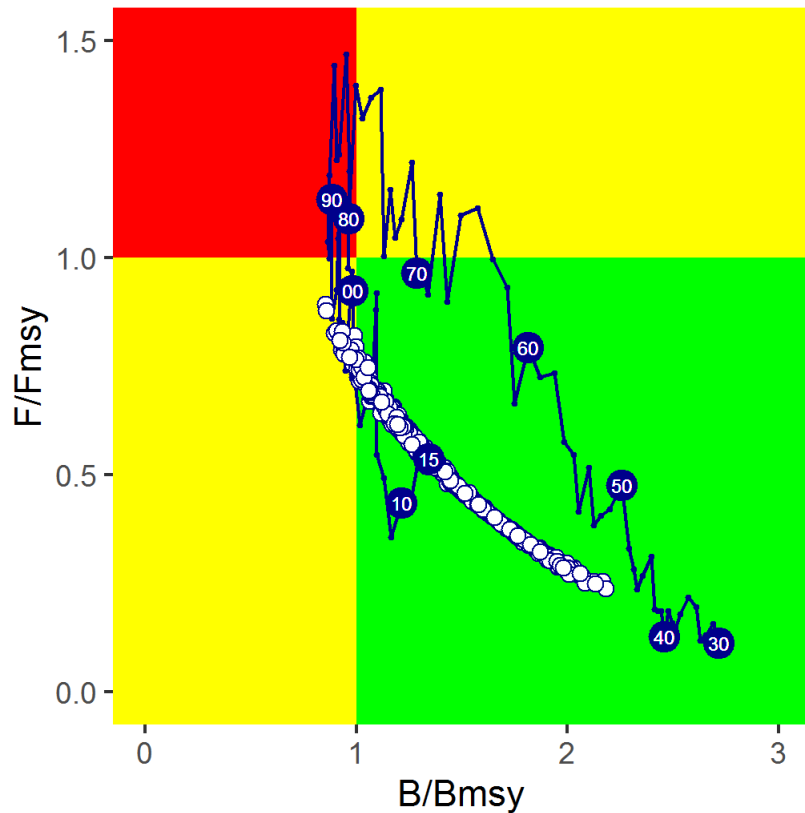## Catch (mt) by Gear Type:
2006-2015 Catches below TAC

ALB -ATN: Task I by gear

Legend: Troll, Trawl, Purse seine, Other surf., Longline, Bait boat, TAC
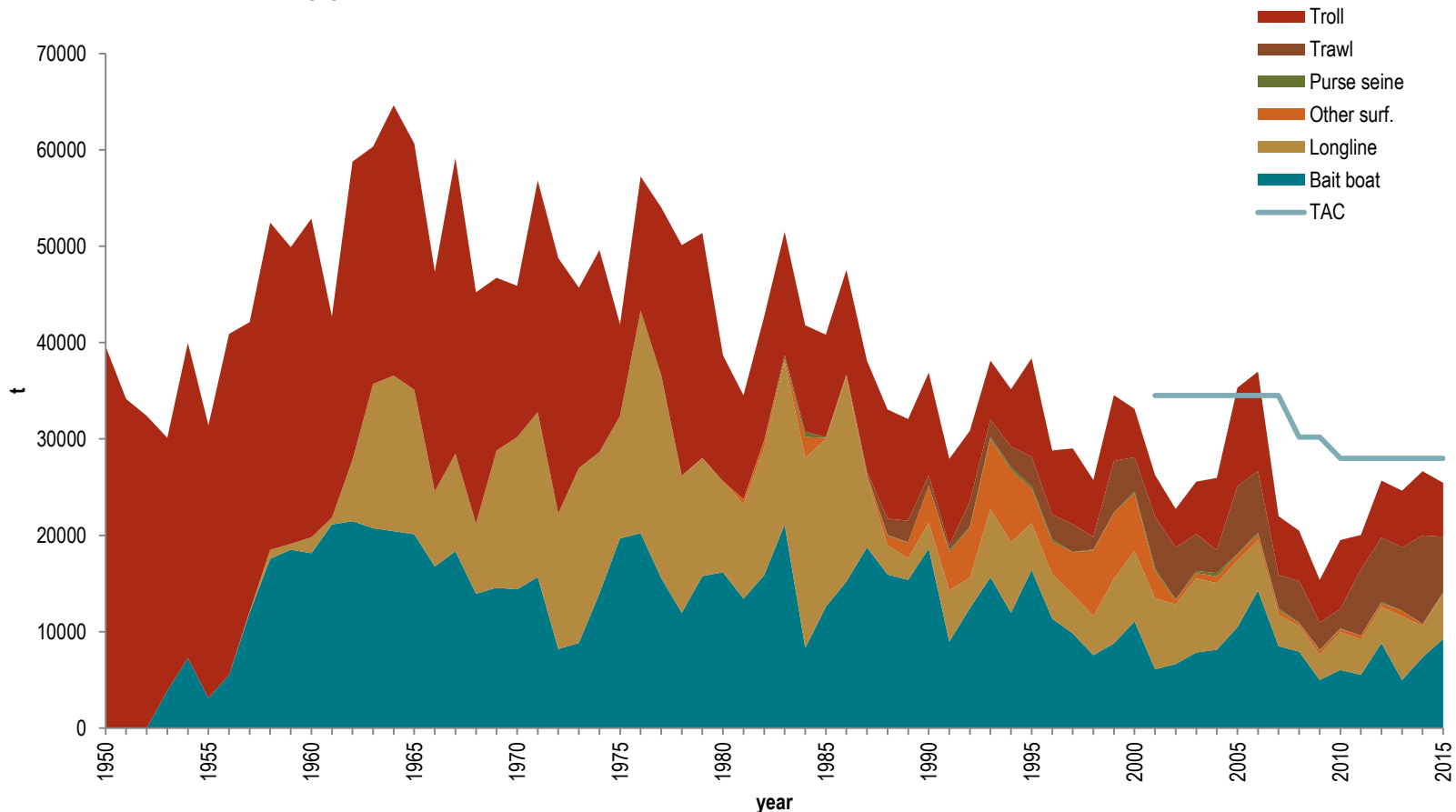
North Atlantic Albacore 2016 Assessment
Stock Status (and historical trend)

NOT overfished: SSB_{2014}/SSB_{MSY}=1.36 (1.05-1.78)

Nor overfishing: F_{2014}/F_{MSY}=0.54 (0.35-0.72)

Issues of Assessment (N. Albacore)

- Model diagnostics were concerning (strong retrospective pattern)

- CPUE series truncated and problematic for convergence

- The update used a surplus production model, which does not take into account issues of age structure/changes in selectivity and multiple indices in different areas (the previous assessment applied models that could take this into account).

- Due to these concerns, the SCRS did not develop a strategy matrix and advised that the TAC be kept as is (28K t).
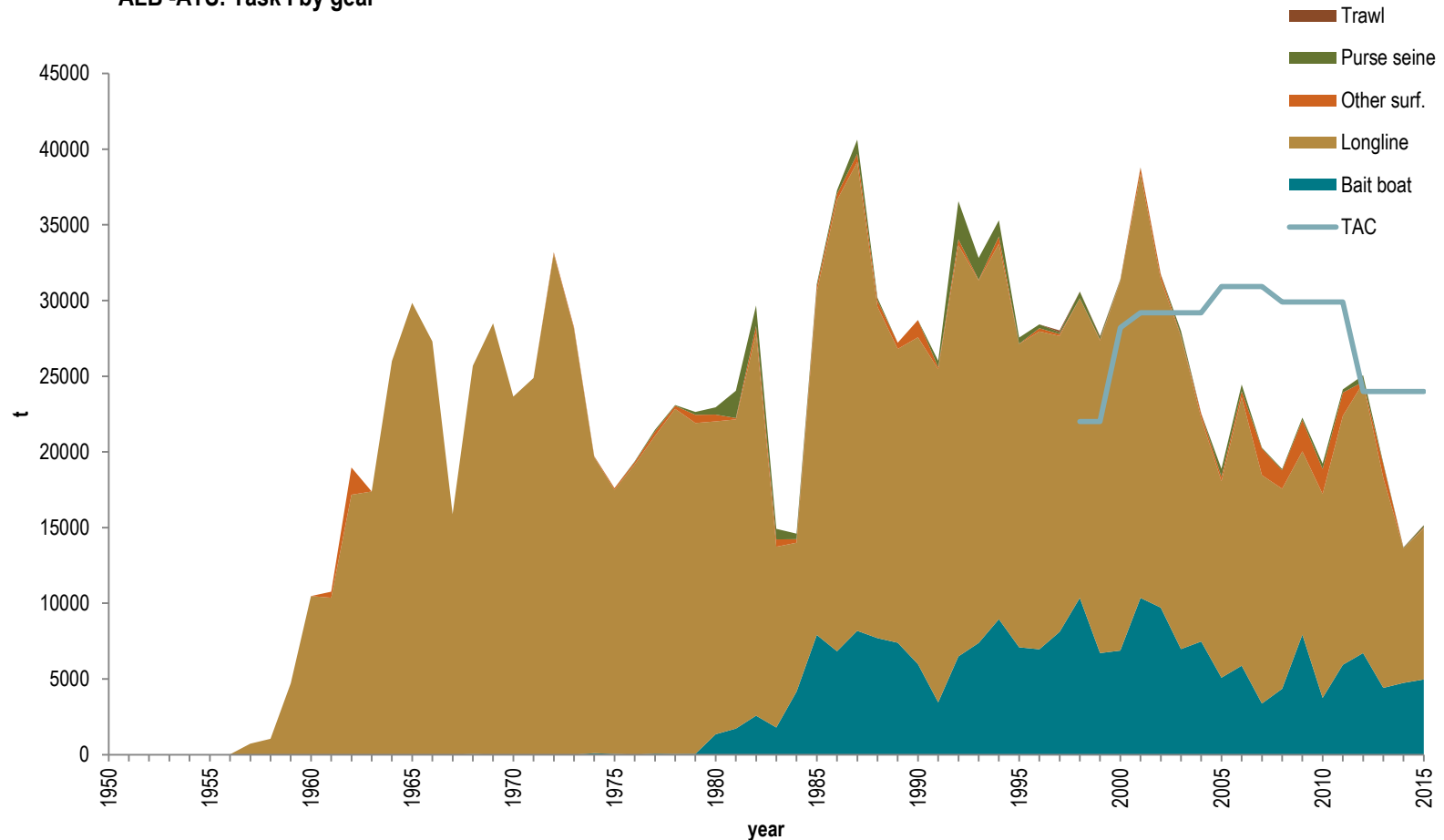
South Atlantic Albacore
Catch (mt) by Gear:
below TAC in recent years
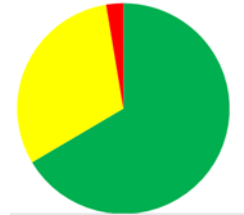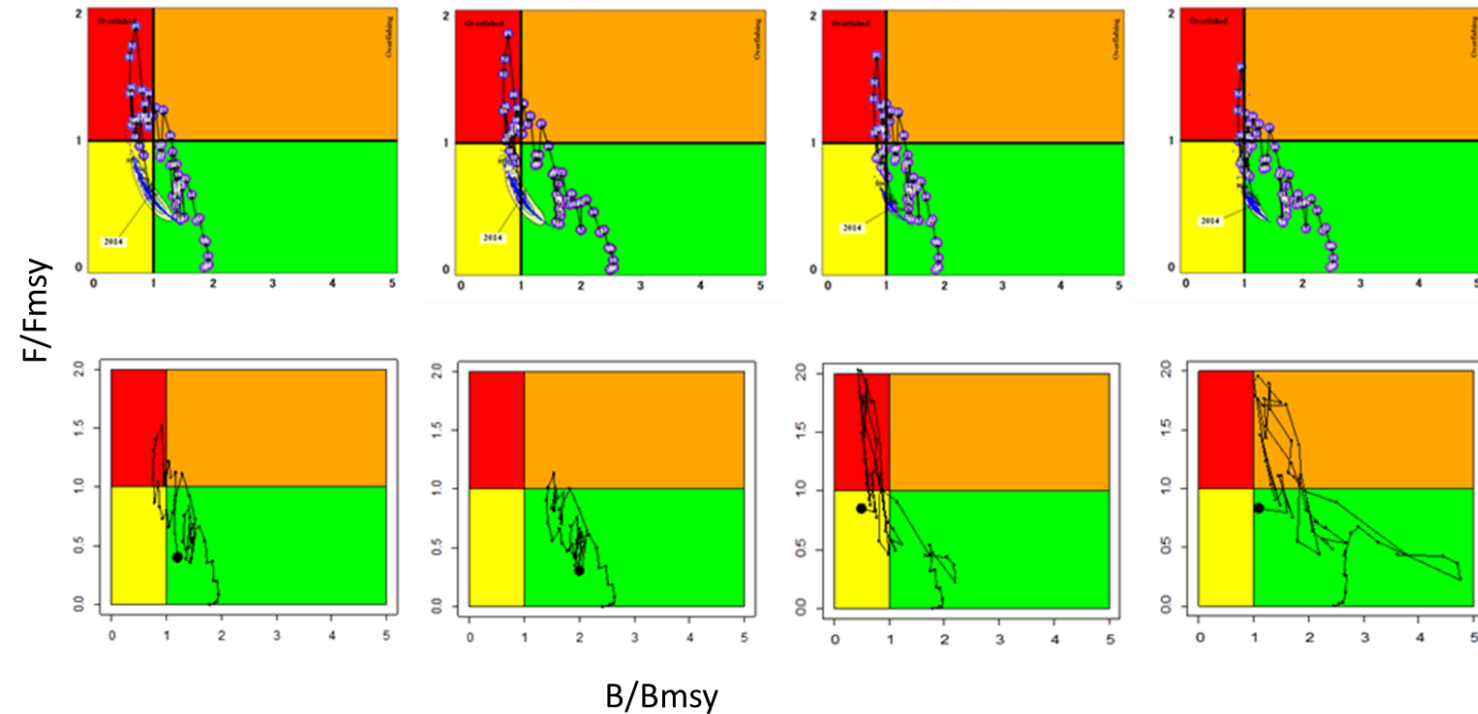

ALB -ATS: Task I by gear

South Atlantic Albacore

Stock Status (2013 Assessment):
Overfished and Undergoing Overfishing

NOT overfished : SSB_{2014}/SSB_{MSY} = 1.10 (0.51-1.80)

NOR overfishing: F_{2014}/F_{MSY} = 0.54 (0.31-0.87)

Mediterranean Albacore
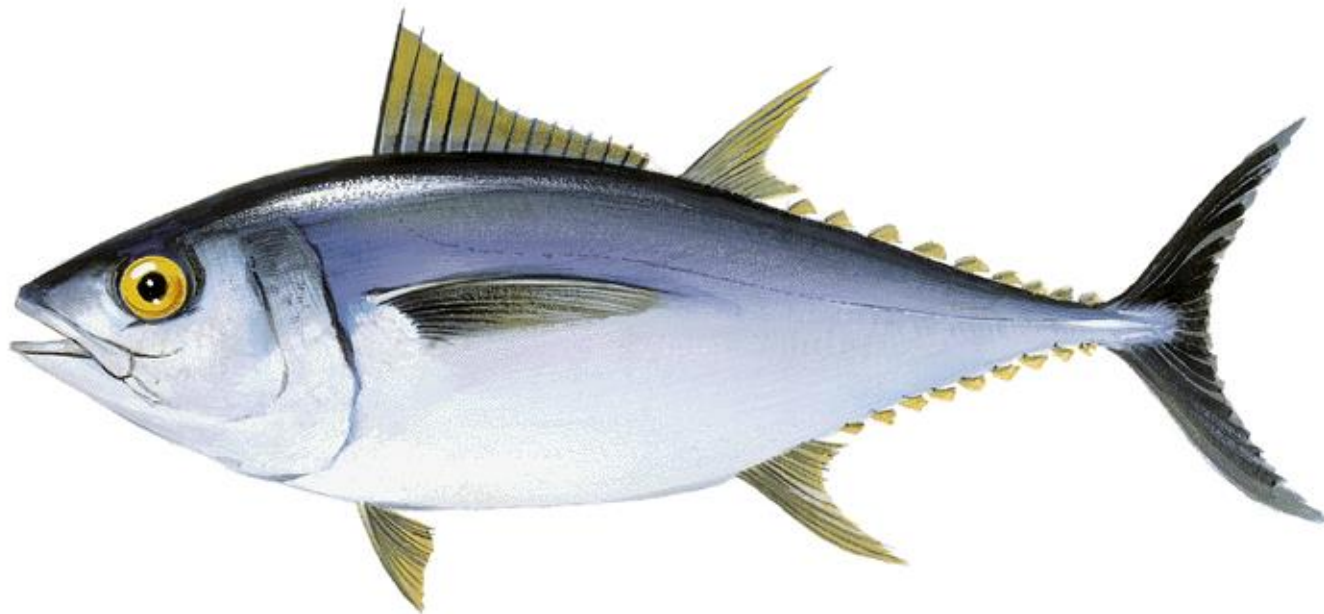## Catches (mt) by Gear

ALB-MED : Task I by gear

- **Uncertainty is large**
- **Previous advice is maintained (24K t for next few years).**
- **Scheduled for assessment next year**

Legend: Troll, Trawl, Purse seine, Other surf., Longline, Bait boat

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BIGEYE (*Thunnus obesus*)

BET. Task-I Catches

2015 =79,577 t

Legend:
- Purse seine
- Other surf.
- Longline
- Bait boat
- TAC

Rec 04-01
Rec 09-01
Rec 15-01

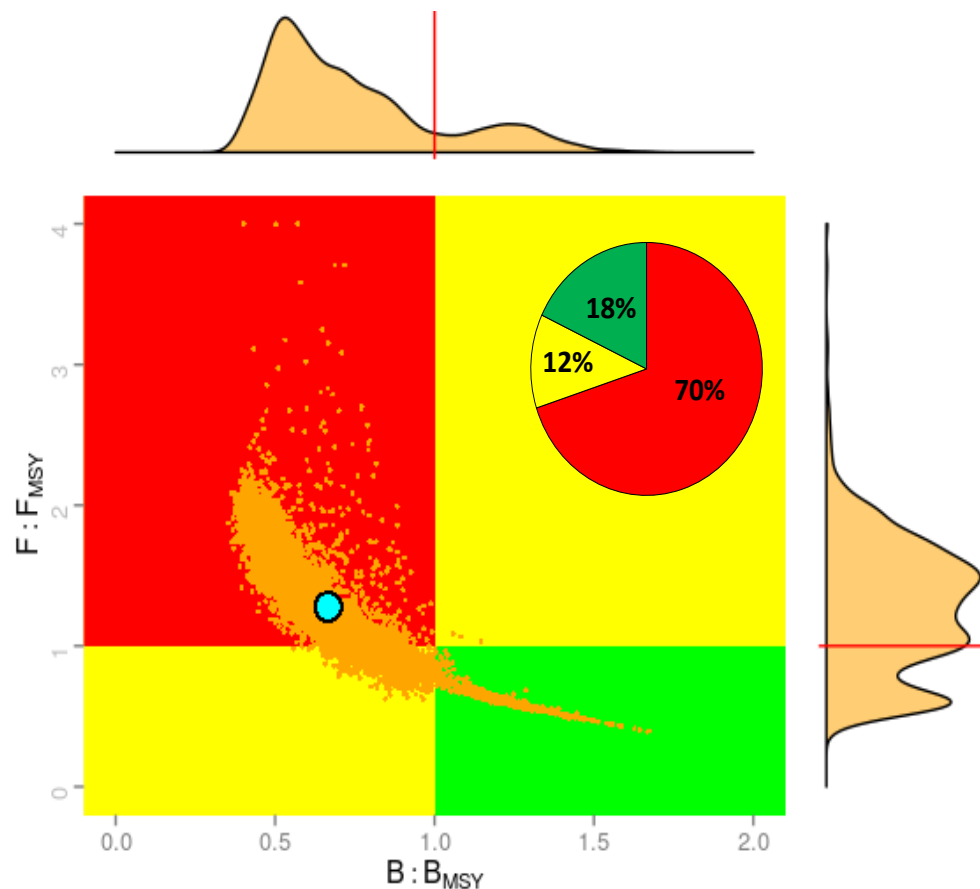NOAA FISHERIES
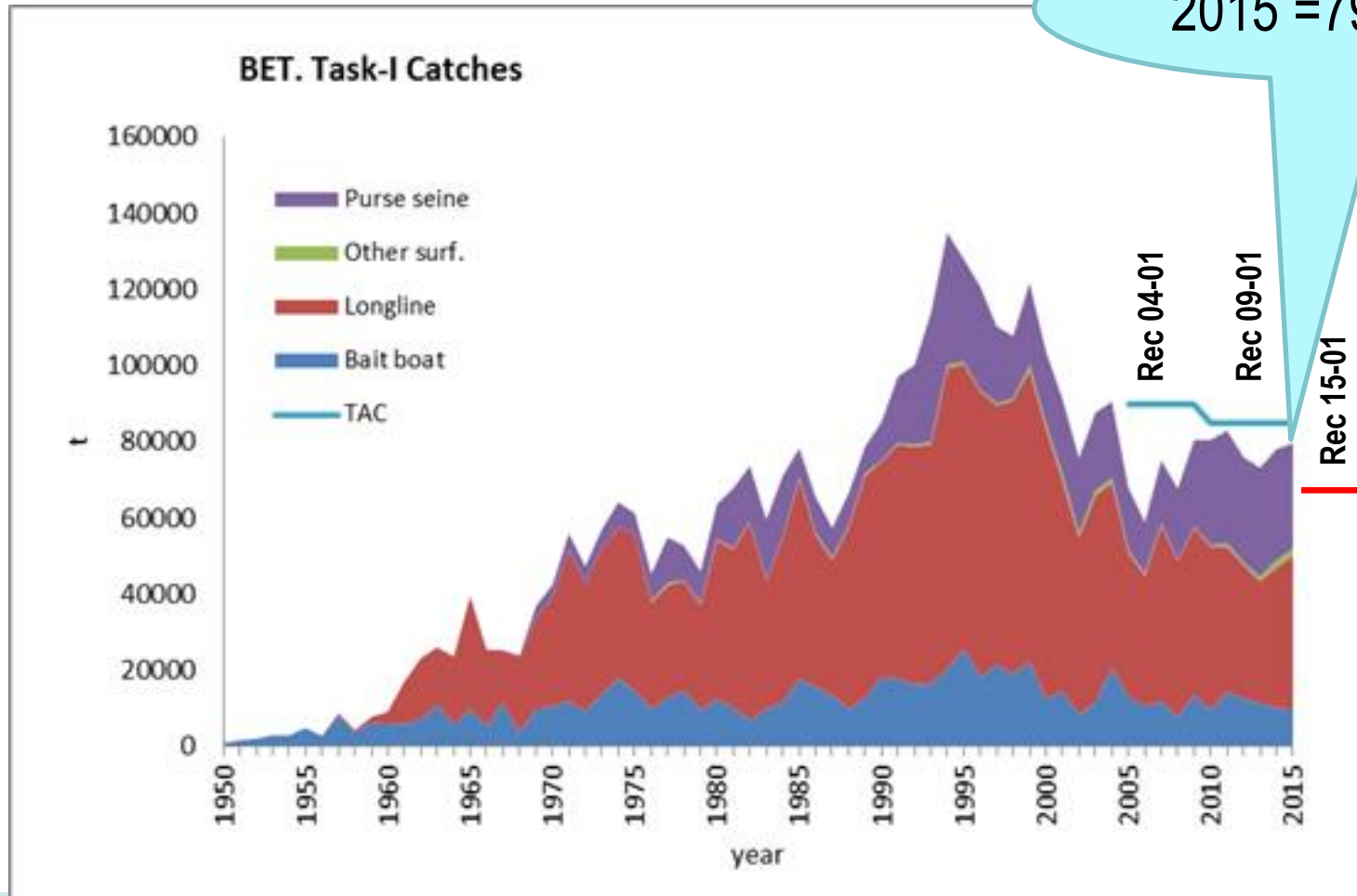
KOBE PHASE PLOT

ASPIC

SS3

Catch 2015 ~ 79,577 t
Average catch 2011-2015 ~ 77,942 t
MSY = 78,824 t. (67,725 – 85,009 t)
B_{2014}/B_{MSY} **~ 0.67 (0.48–1.20) - Overfished**
F_{2014}/F_{MSY} **~ 1.28 (0.62–1.85) - Overfishing**

K2SM

ASPIC

SS3

Probability of being in the green zone (B>Bmsy and F<Fmsy)

TAC (000 t)	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
0	17	17	21	33	57	74	85	92	95	97	98	98	99	99
40	17	17	18	22	31	40	51	60	67	73	78	81	84	87
45	17	17	18	21	29	37	45	53	60	66	71	76	79	81
50	17	17	18	20	27	34	41	48	53	59	64	69	72	76
55	17	17	18	20	25	31	37	42	47	51	56	60	64	68
60	17	17	17	19	23	28	33	37	40	44	48	52	55	58
65	17	17	17	18	22	26	30	33	36	39	42	44	46	49
70	17	17	17	18	21	24	26	30	31	34	36	38	39	41
75	17	17	17	18	19	22	24	26	27	29	31	32	33	35
80	17	16	16	16	18	19	21	22	23	25	26	27	28	29
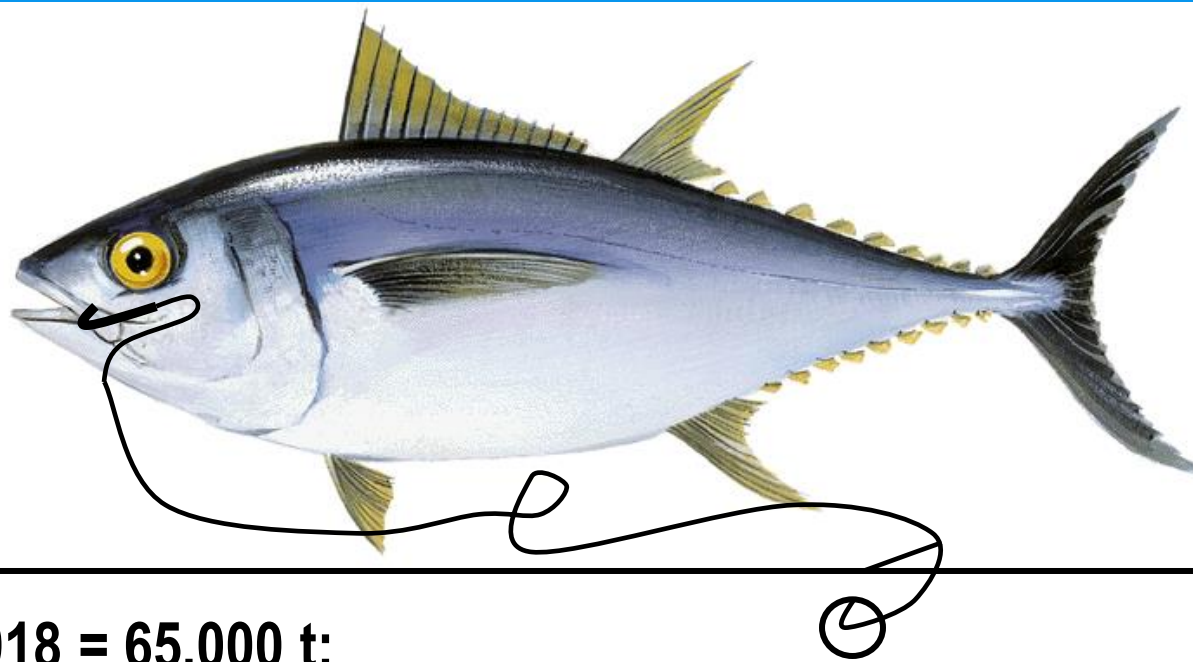
✓ **TAC 2016-2018 = 65,000 t;**

✓ **Capacity limit to be restricted to the 2005 BET nº vessels;**

✓ **Time/area closure to FAD fishing from 1st January to 28th February 4ºS, 5ºN, 20ºW, African coast;**

✓ **Limitations of FAD: 500 FADs active at any time by vessel;**
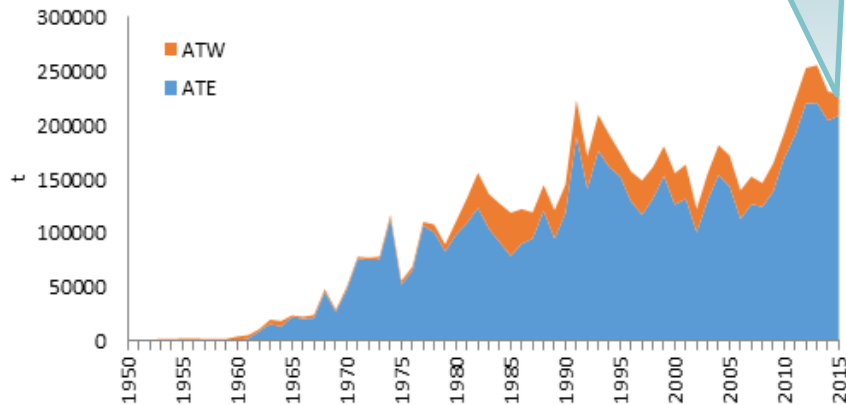
✓ **Non-entangling FADs.**

SKIPJACK
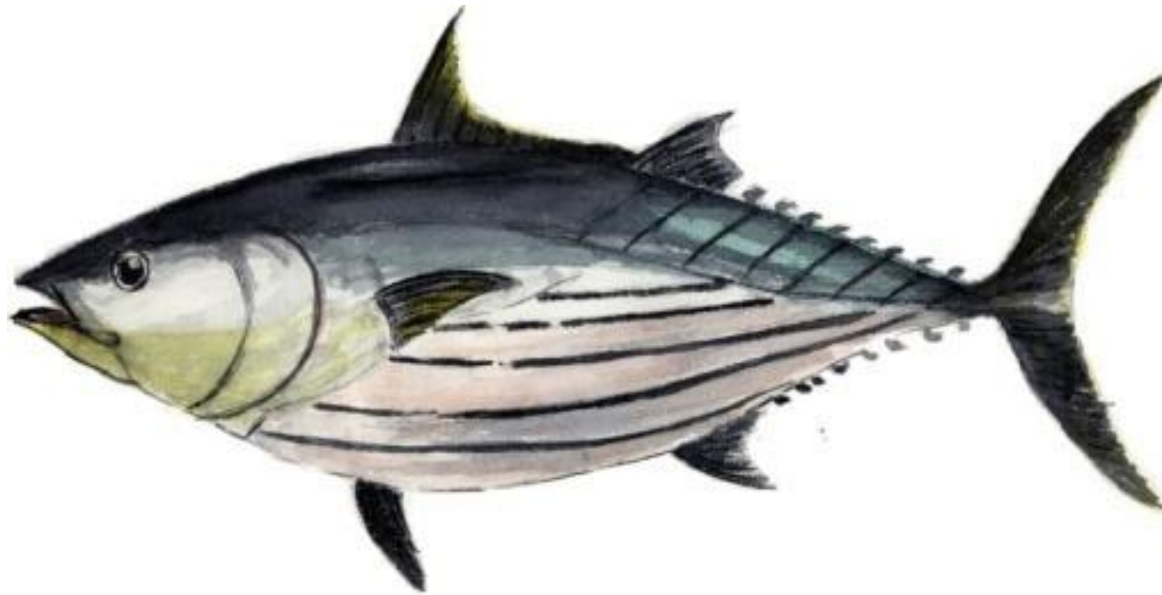
Catches – Tasks I and II

229,212t

SKJ Task-I cumulative catches by Stock
- ATW
- ATE

- Decline in catch since the early 1990s (due to a decrease in nominal fishing effort and/or to a moratorium effect), followed by a new strong increase in the recent years (2013 historic record)

- Catchability of SKJ increased in the early 1990s due to FADs fishing

209,283 t

SKJ Task-I cumulative catches (AT.East)
- ATE Others
- ATE Purse seine
- ATE Bait boat

19,929 t
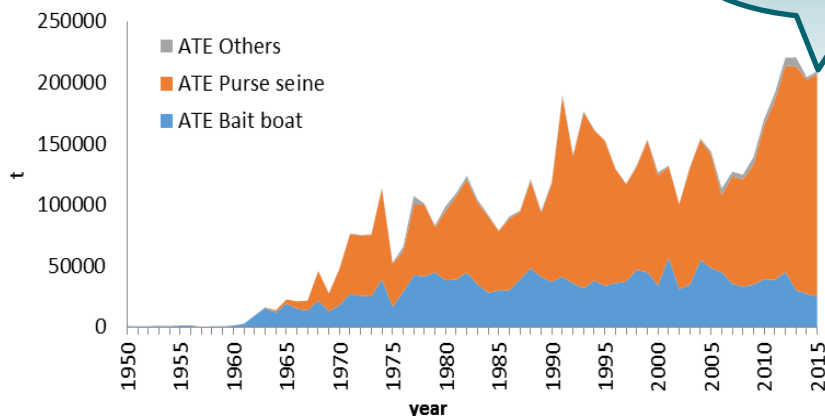
SKJ Task-I cumulative catches (AT.West)
- ATW Others
- ATW Purse seine
- ATW Bait boat
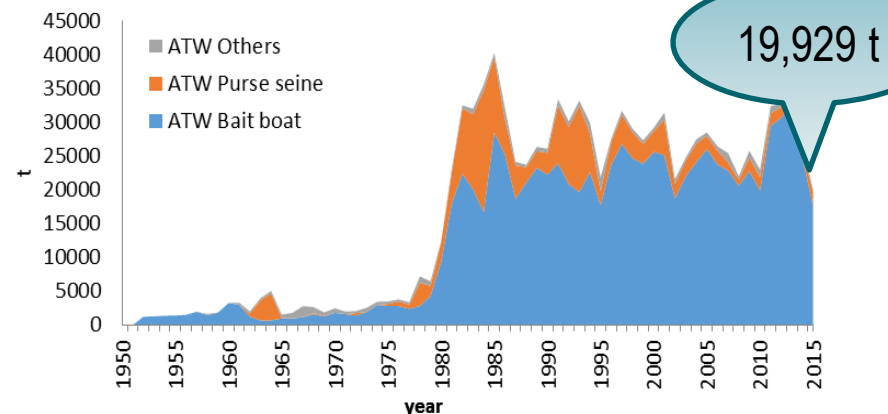
SKJ catches during the period 1970-2014
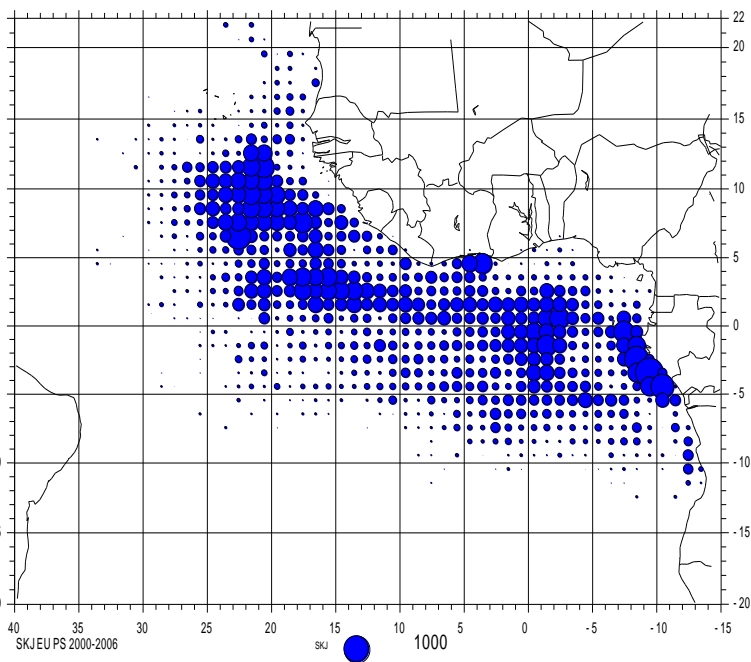
Mauritania

Angola

EU PS fleet

2000-2006
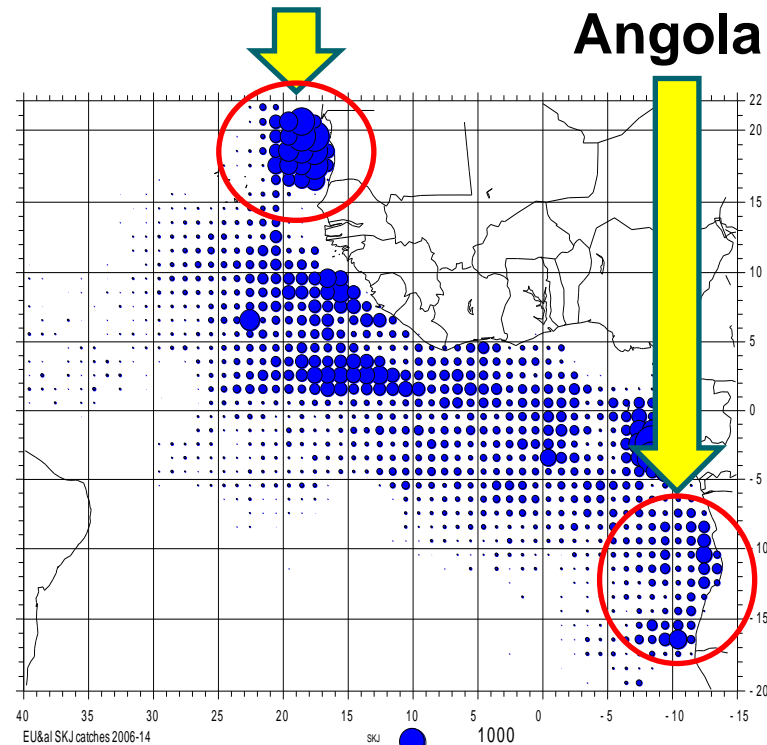
2007-2014

State of the stock (2013)

Stock assessments for East and West Atlantic skipjack were conducted in 2014 on data through 2013. No quantitative estimates of Eastern SKJ stock status or MSY.

W-ATL SKJ

100%
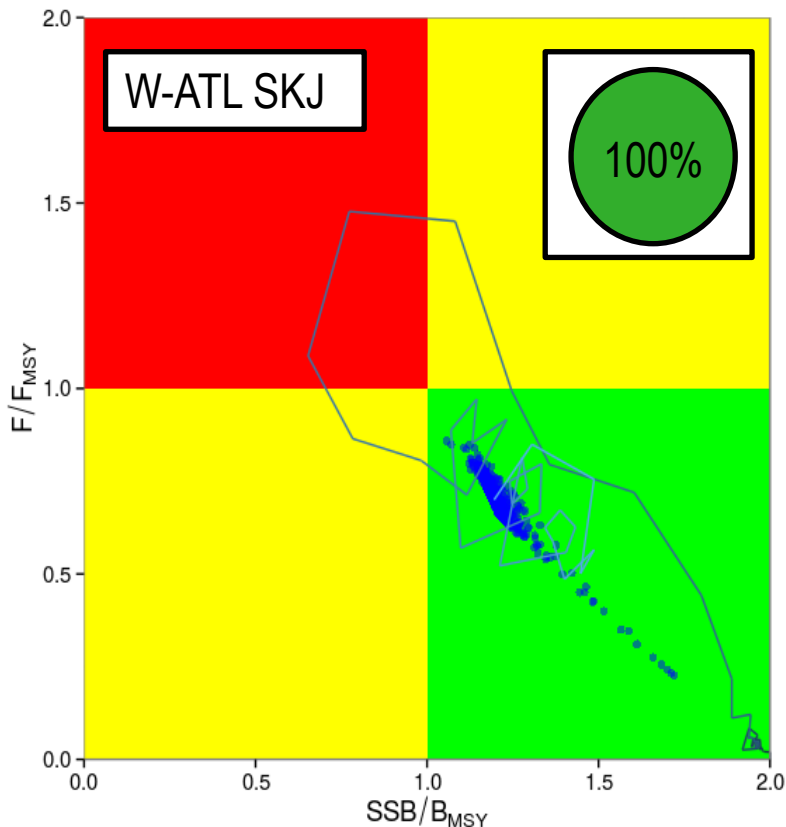
	East Atlantic	West Atlantic
Maximum Sustainable Yield (MSY)	Probably higher than previous estimates (143,000-170,000)	Around 30,000-32,000 t
Current yield (2015)	209,283 t	19,929 t
Current Replacement Yield	Unknown	Somewhat below 32,000 t
Relative Biomass (B_{2013}/B_{MSY})	Likely >1	Probably close to 1.3
Mortality due to fishing (F_{2013}/F_{MSY})	Likely <1	Probably close to 0.7
Management measures in force	Rec. 15-01	None

Billfish

2016 SAILFISH STOCK ASSESSMENT

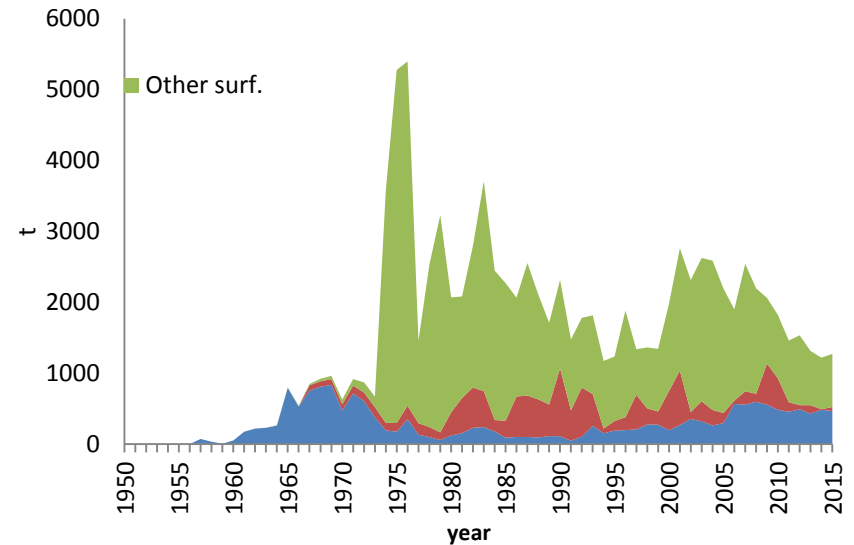# ESTIMATED CATCHES OF Sailfish (*Istiophorus albicans*) by gear (1956-2015)

> MSY Estimate (east): 1,635 – 2,157 t
> Current Catch Level (2015): 1,271 t
>
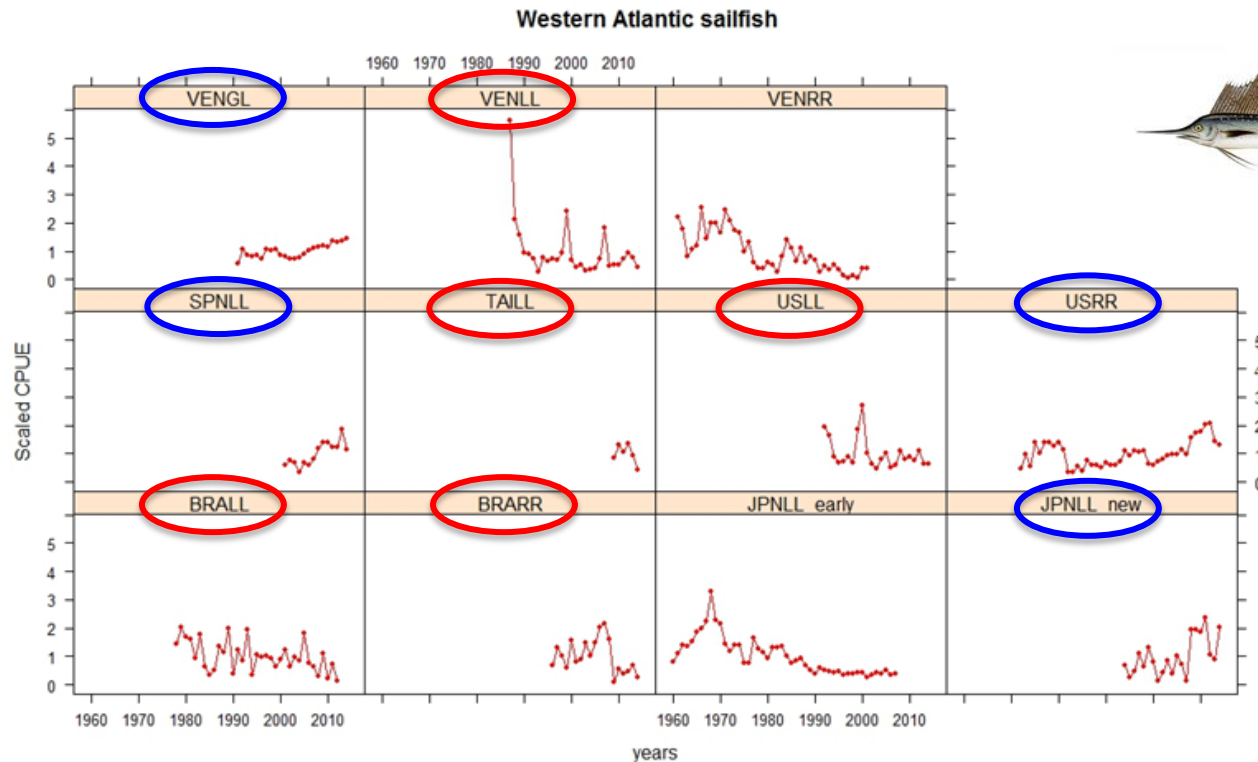> MSY Estimate (west): 1,438 – 1,636 t
> Current Catch Level (2015): 892 t

SAI Task I cumulative catches (At. West)
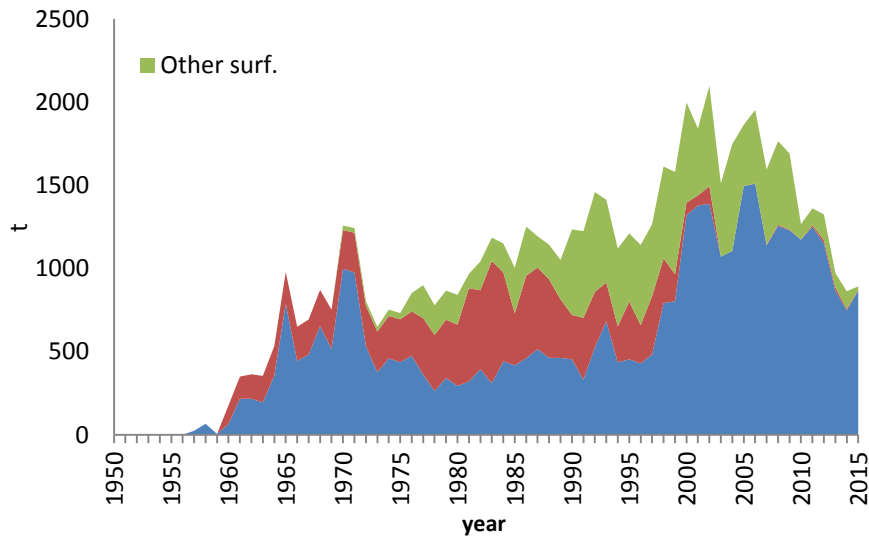
SAI Task I cumulative catches (At. East)

Sailfish (west) Showed Conflicting Catch Rates

Western Atlantic sailfish

CPUE w/ increasing trends:
a) JPNLL new
b) USRR
c) VENGL
d) SPNLL

CPUE w/ decreasing trends:
a) BRARR
b) BRALL
c) USLL
d) VENLL
e) TAILL

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Sailfish (West) Stock Status

Last Assessment:	2016
Reference Year:	2014
SSB_{2010}/SSB_{MSY} (M1):	1.90 (1.07 – 2.66)
SSB_{2010}/SSB_{MSY} (M2):	1.24 (0.64 – 1.76)
F/F_{MSY} (M1):	0.35 (0.26 – 6.10)
F/F_{MSY} (M2):	0.69 (0.44 – 5.13)
Overfished:	**Not Likely**
Overfishing:	**Not Likely**
Next Assessment:	2018

Model 1.1

4% 2%

94%

- Kobe Targets Achieved
- Over Fished or Over Fishing
- Over Fished & Over Fishing

Model 2.1

8%

22%

70%

- Kobe Targets Achieved
- Over Fished or Over Fishing
- Over Fished & Over Fishing

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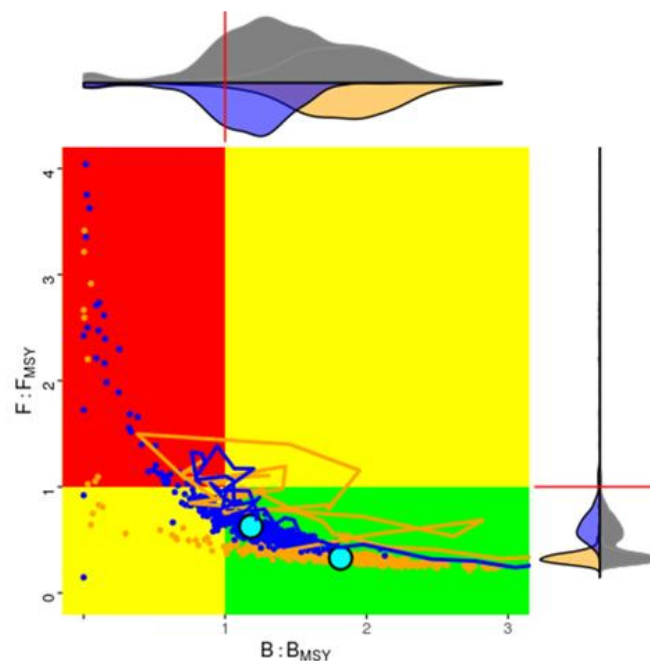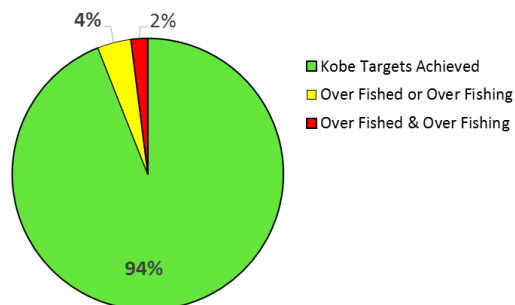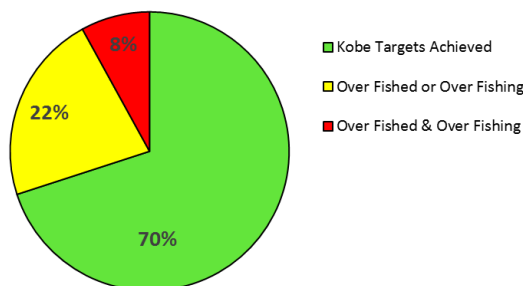
Sailfish (east) Showed Conflicting Catch Rates

Eastern Atlantic sailfish
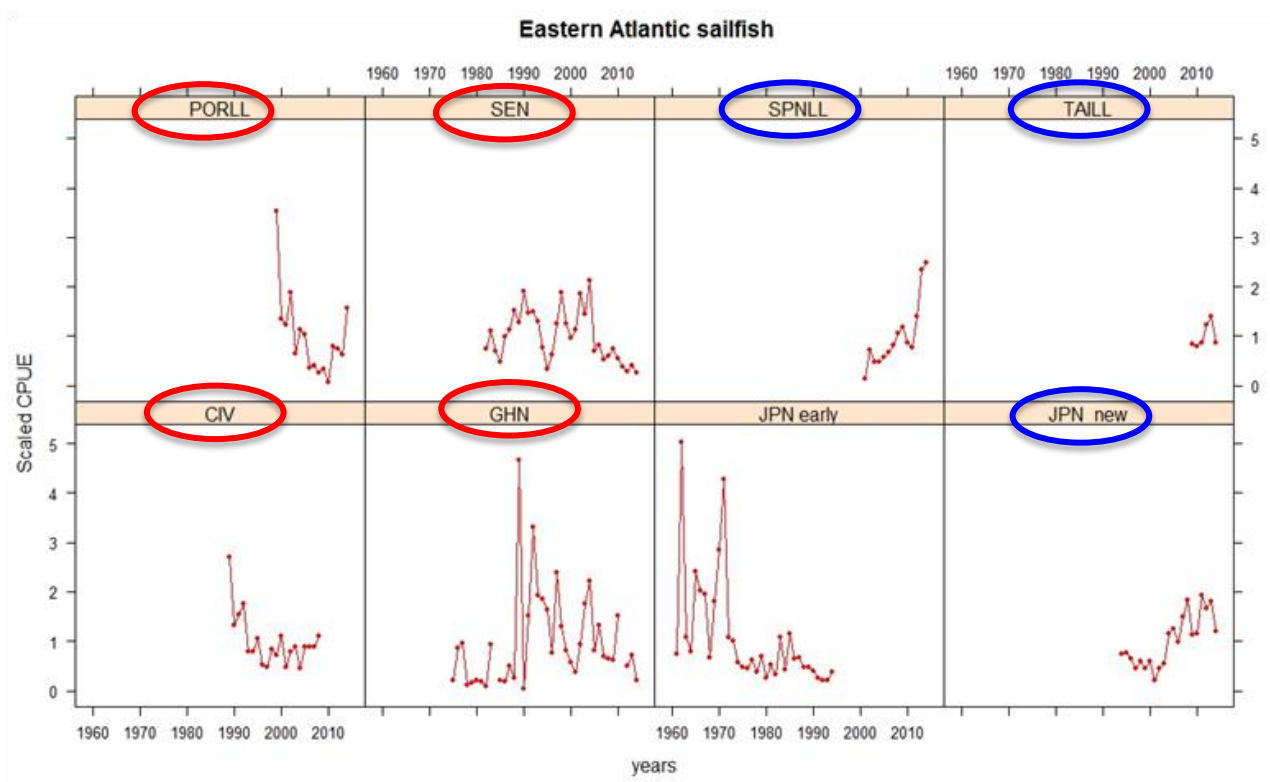
CPUE w/ increasing trends:
a) JPNLL new
b) TAILL
c) SPNLL

CPUE w/ decreasing trends:
a) CIV
b) GHN*
c) PORLL
d) SEN

Sailfish (East) Stock Status
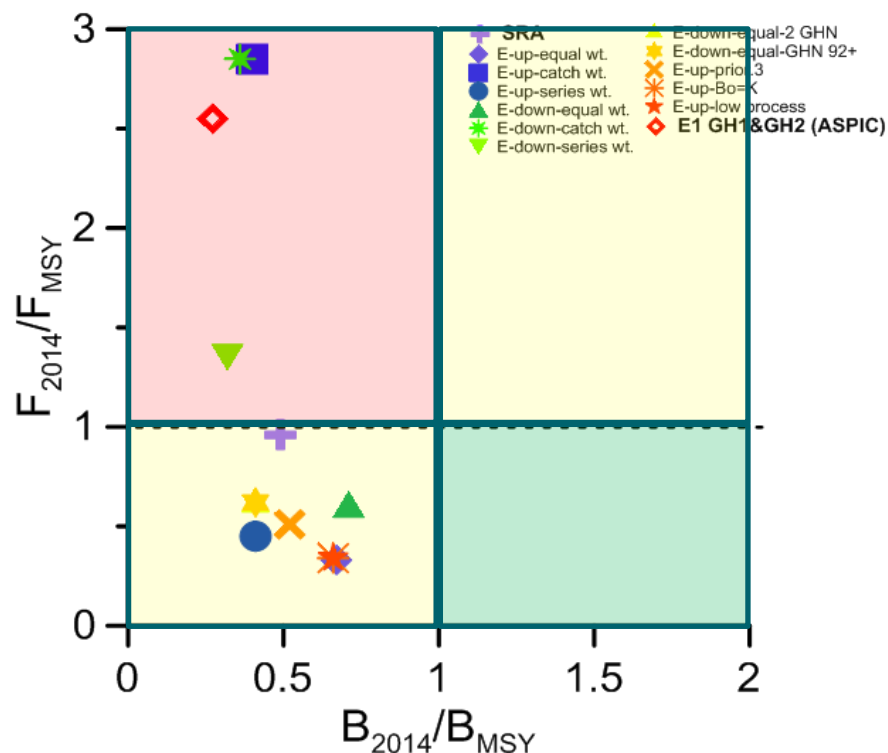

Last Assessment: 2016
Reference Year: 2014
B_{2014}/B_{MSY} :   0.22 – 0.70
F/F_{MSY} :   0.33 – 2.85
Overfished: Yes
Overfishing: Possibly
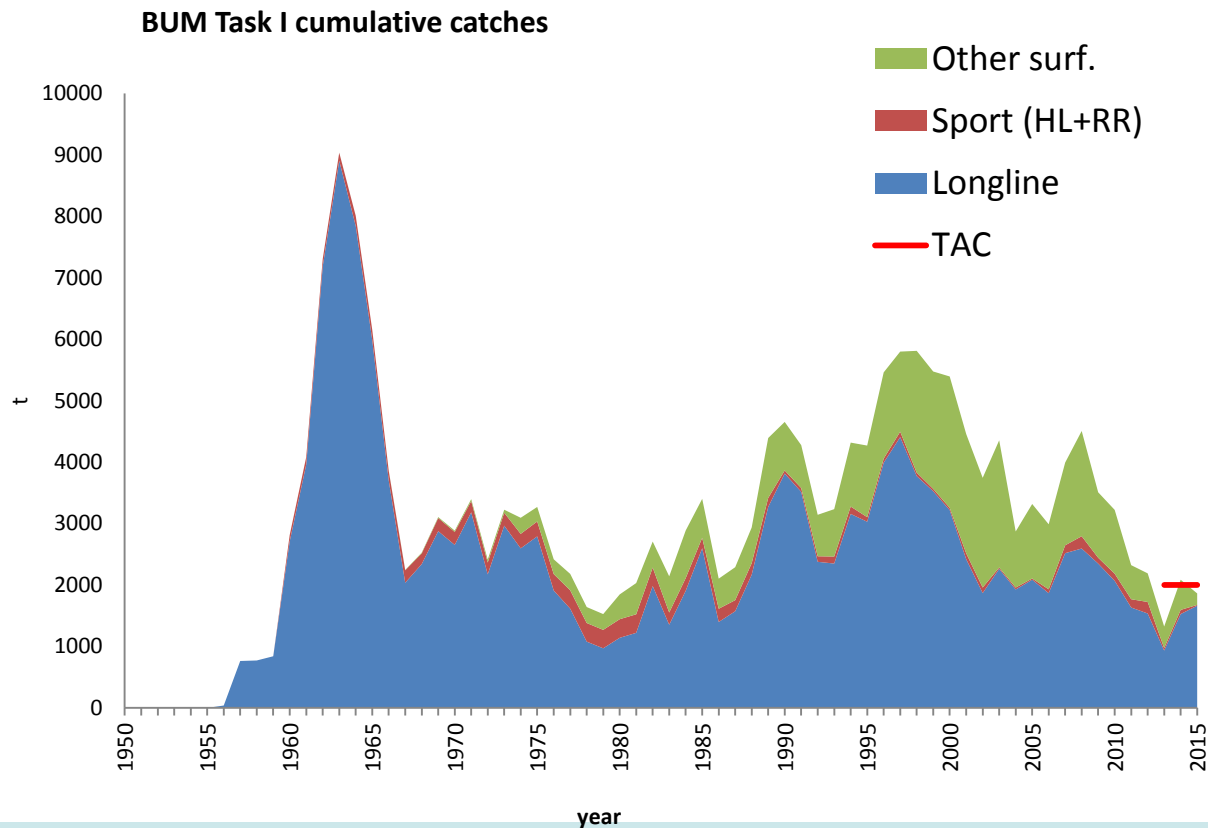Next Assessment: Unknown

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Blue Marlin

ESTIMATED CATCHES OF Blue Marlin (*Makaira nigricans*) by gear (1956-2015)

MSY Estimate: 2,837 t (2,343 – 3,331 t)
Current Catch Level (2015):   1,864 t

BUM Task I cumulative catches

Legend: Other surf., Sport (HL+RR), Longline, TAC

Blue Marlin Stock Status

Last Assessment: 2010
Reference Year: 2009
SSB_{2010}/SSB_{MSY} : 0.67 (0.53 – 0.81)
F/F_{MSY} : 0.99 (0.75 – 1.27)
Overfished: Yes
Overfishing: Yes
Next Assessment: 2018
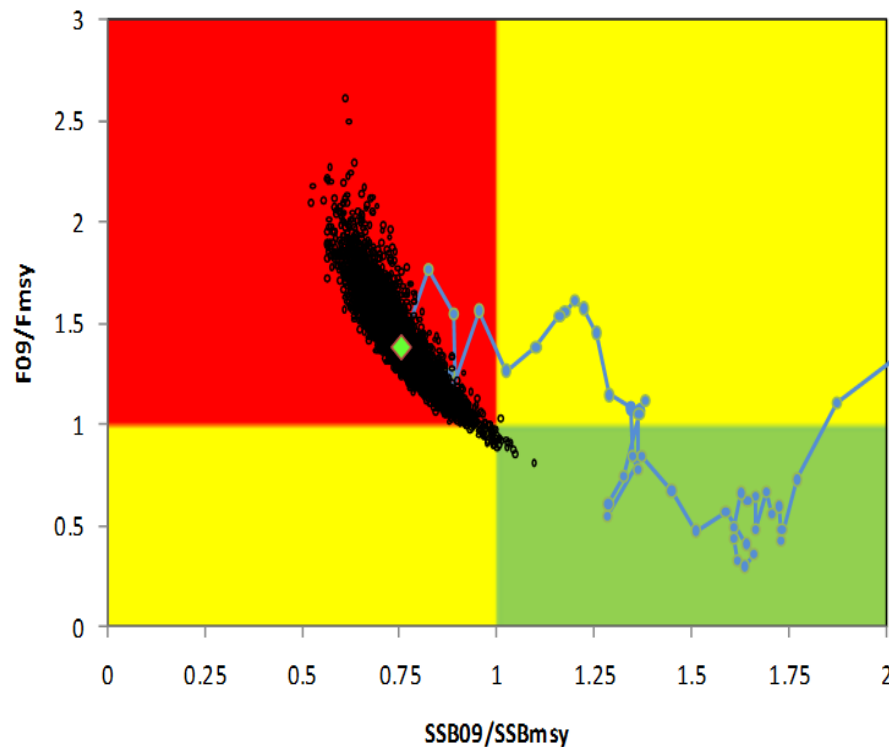
White Marlin

# ESTIMATED CATCHES OF White Marlin (*Tetrapturus albidus*) by gear (1956-2015)

MSY Estimate:	2,837 t (2,343 – 3,331 t)
Current Catch Level (2015):	1,864 t

WHM Task I cumulative catches

Legend: Other surf., Sport (HL+RR), Longline, TAC
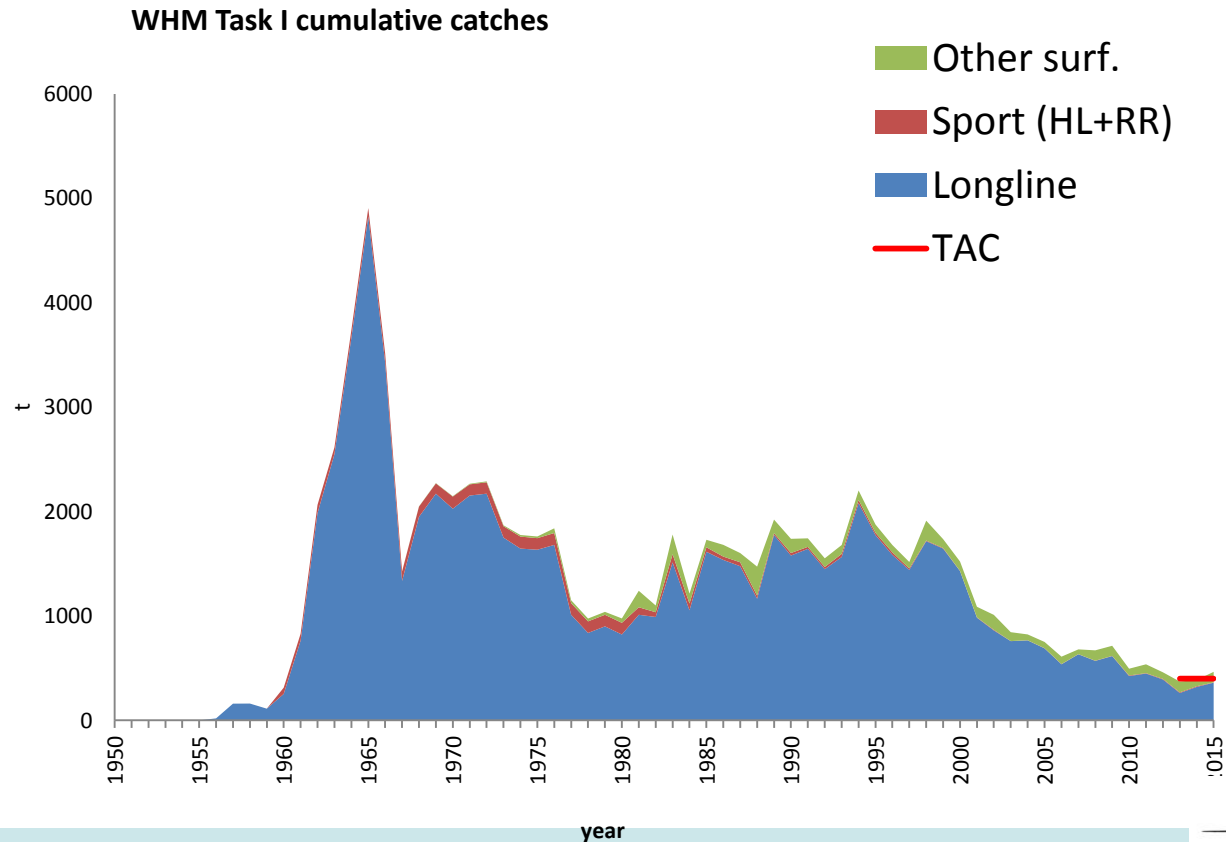
White Marlin Stock Status
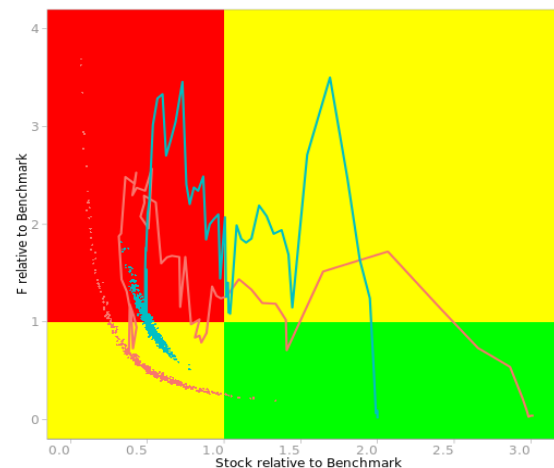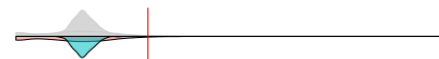
Last Assessment: 2011
Reference Year: 2010
B/B_{MSY} (ASPIC):   0.50 (0.42 – 0.60)
SSB_{2010}/SSB_{MSY} (SS):   0.32 (0.23 – 0.41)
F/F_{MSY} (ASPIC):   0.99 (0.75 – 1.27)
(SS):   0.72 (0.51 – 0.93)
Overfished: Yes
Overfishing: Not Likely
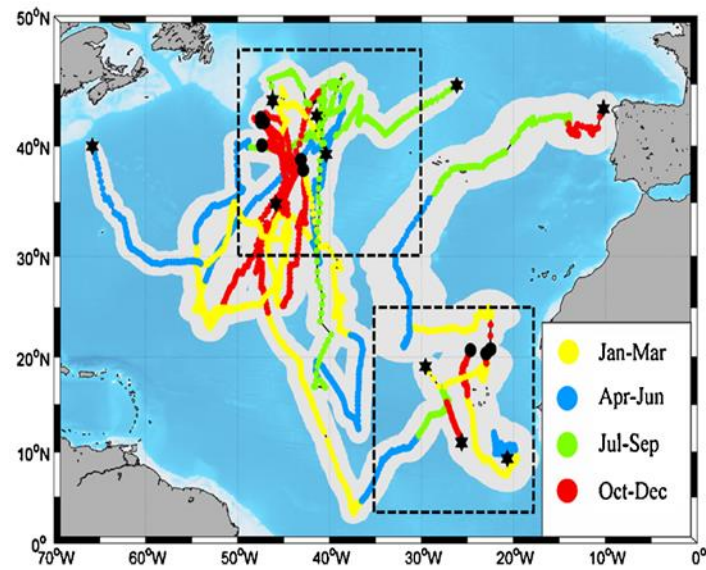Next Assessment: 2018
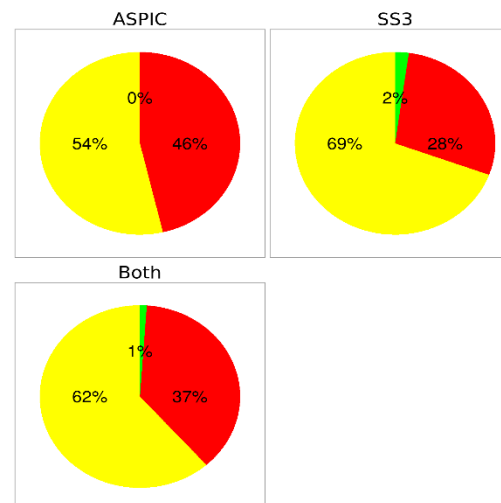
# Swordfish
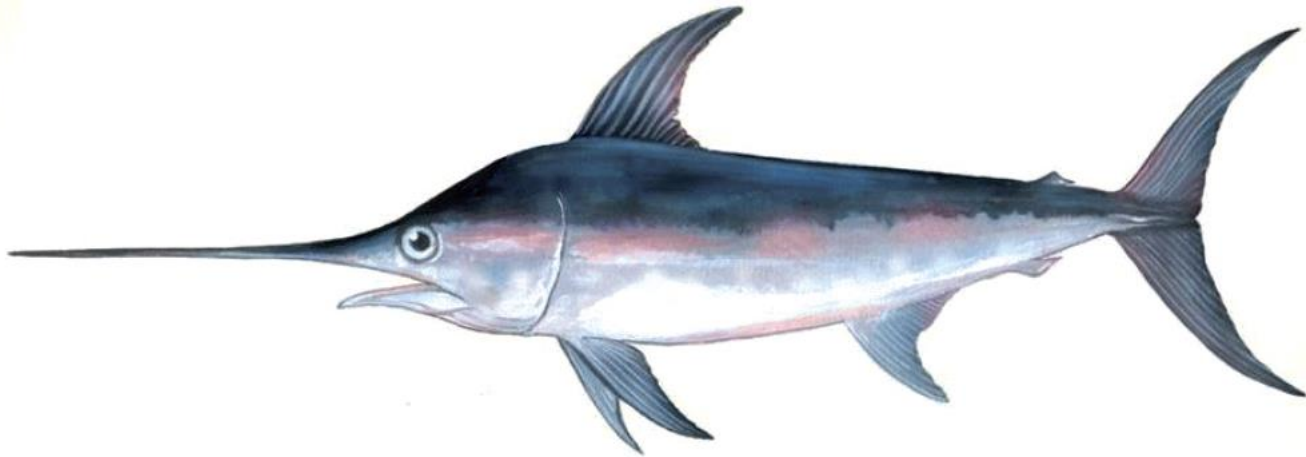
swordfish drawing by Wendy Williams

Revisions to stock structure may occur: new genetics/tagging/CPUE

• new information on stock structure based on genetics and tagging information.

• Uncertainties in boundaries between NE-Mediterranean, North and South, and possibly between NW-NE.

CPUE index trends (last SWO-Atl assessment), population genetics (Smith et al., 2015) and distribution in NW Atlantic (Neilson et al., 2014). Discussed in Schirripa et al. (*in press*).
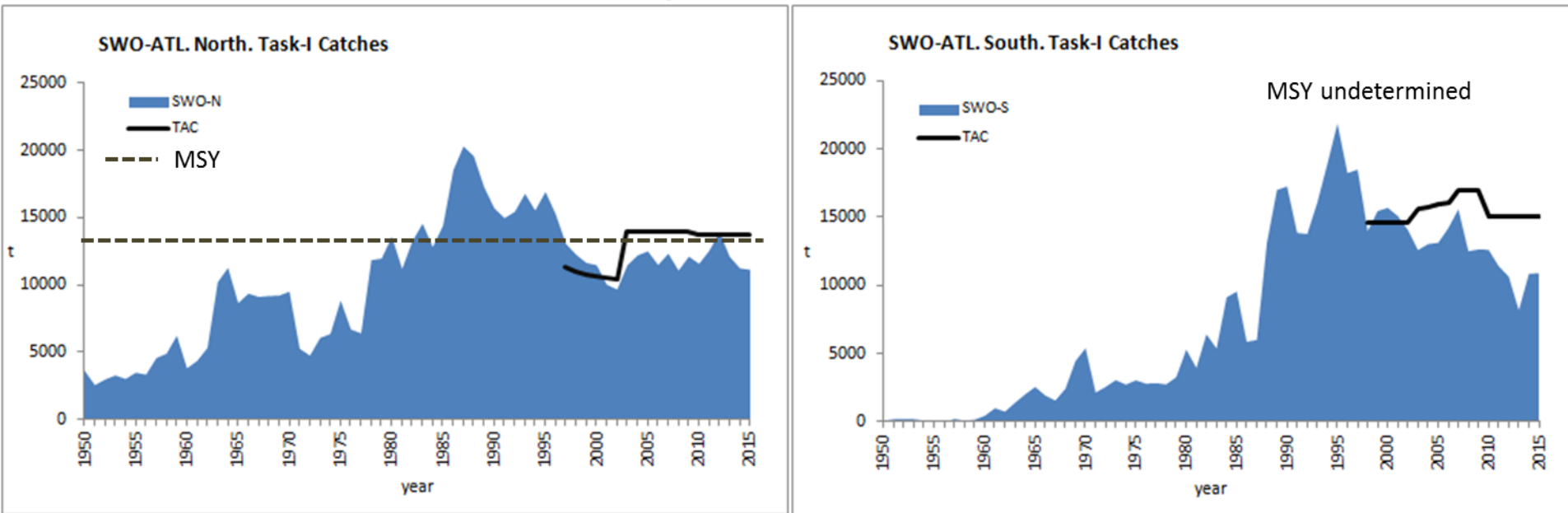
Satellite tagging of SWO in north Atlantic showing seasonal north/south movements (Abascal et al., 2015)
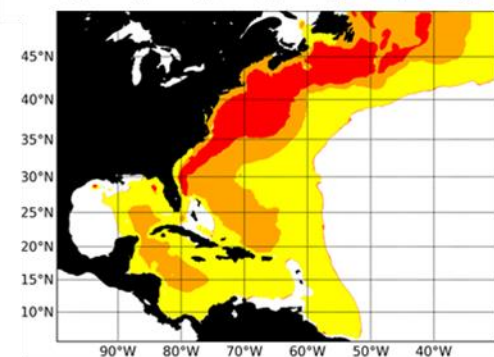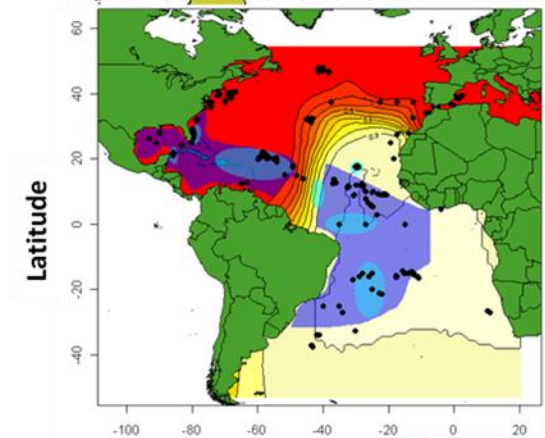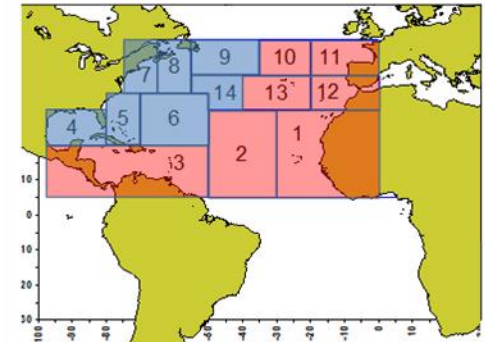
Catches – North and South Atlantic

- **North –** Decrease: 11,108 t in 2015, down from 11,206 t in 2014; 2015 TAC: 13,700

- **South –** Increase: 10,937 t in 2015, up from 10,885 t in 2014; 2015 TAC: 15,000

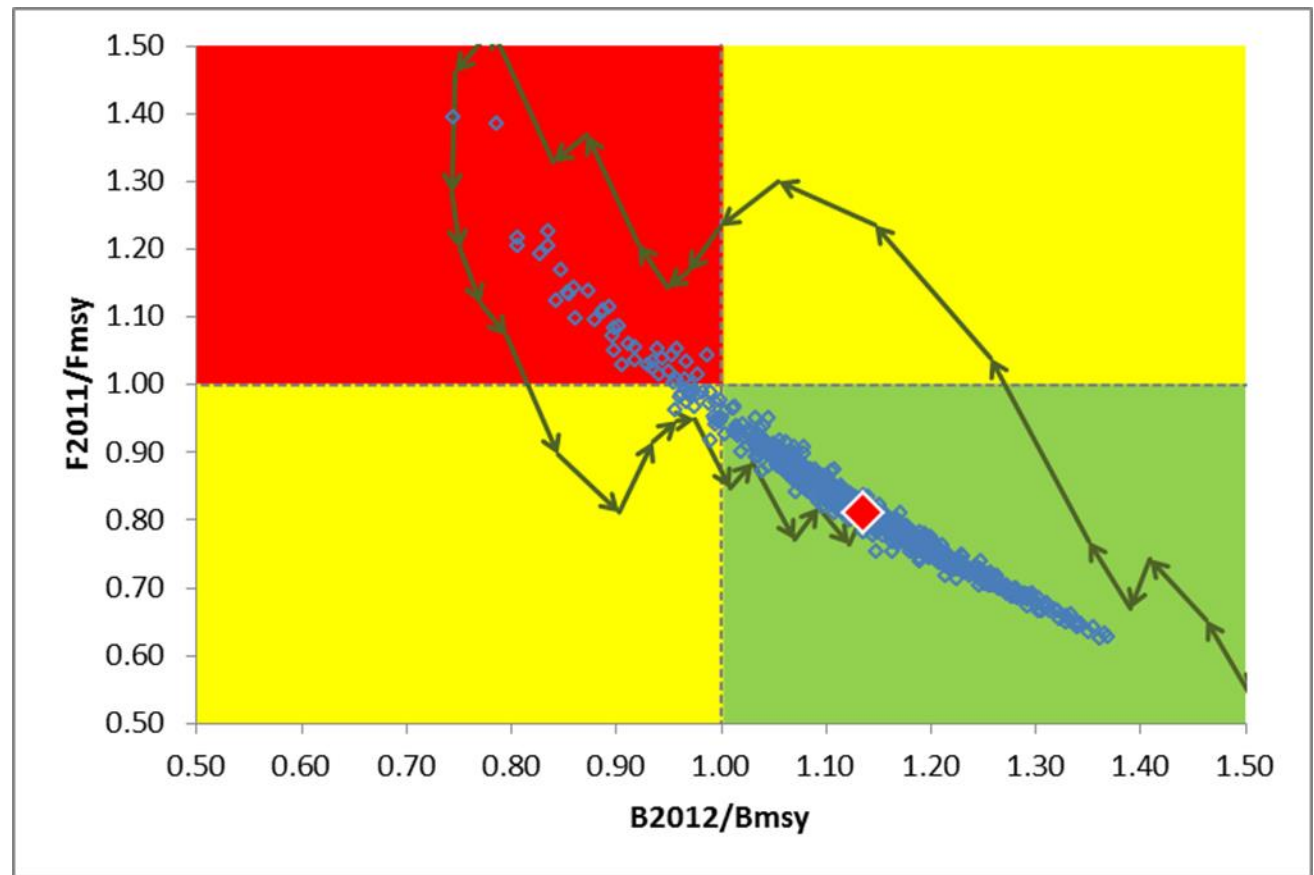- Since 2010 catches in N are higher than in S

Total reported catch (Task I) and TACs for the North (left) and South (right) Atlantic swordfish stocks (1950-2015)

Stock status (ASPIC), North

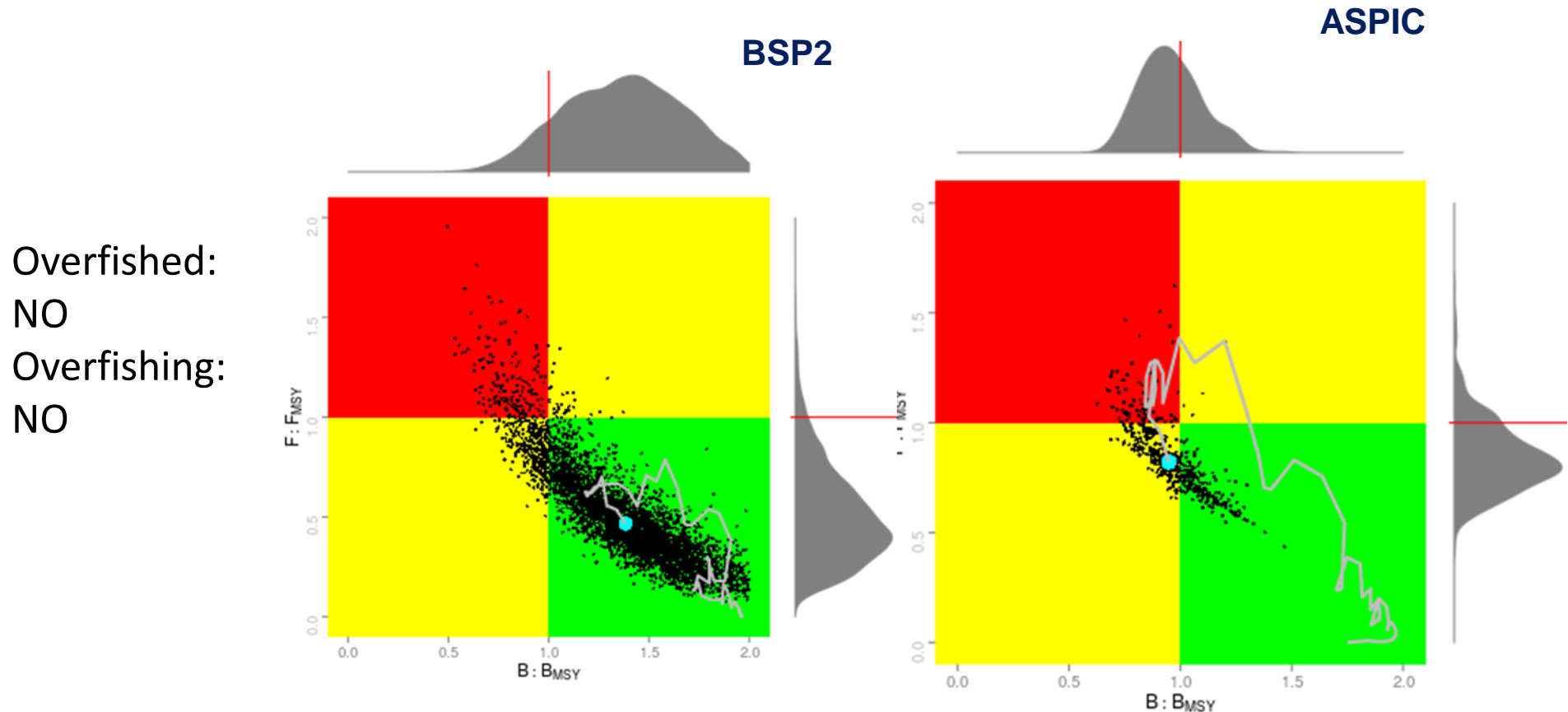Overfished: NO
Overfishing: NO

B2011/BMSY) =
1.14 (1.05-1.24)

F2011/FMSY) =
0.82 (0.73-0.91)

- Stock status in 2011 was similar to status in 2009
- > 90% probability stock was >=B_{MSY}; rebuilding objective [99-2] achieved.

Stock status (BSP2 and ASPIC), South

BSP2

ASPIC
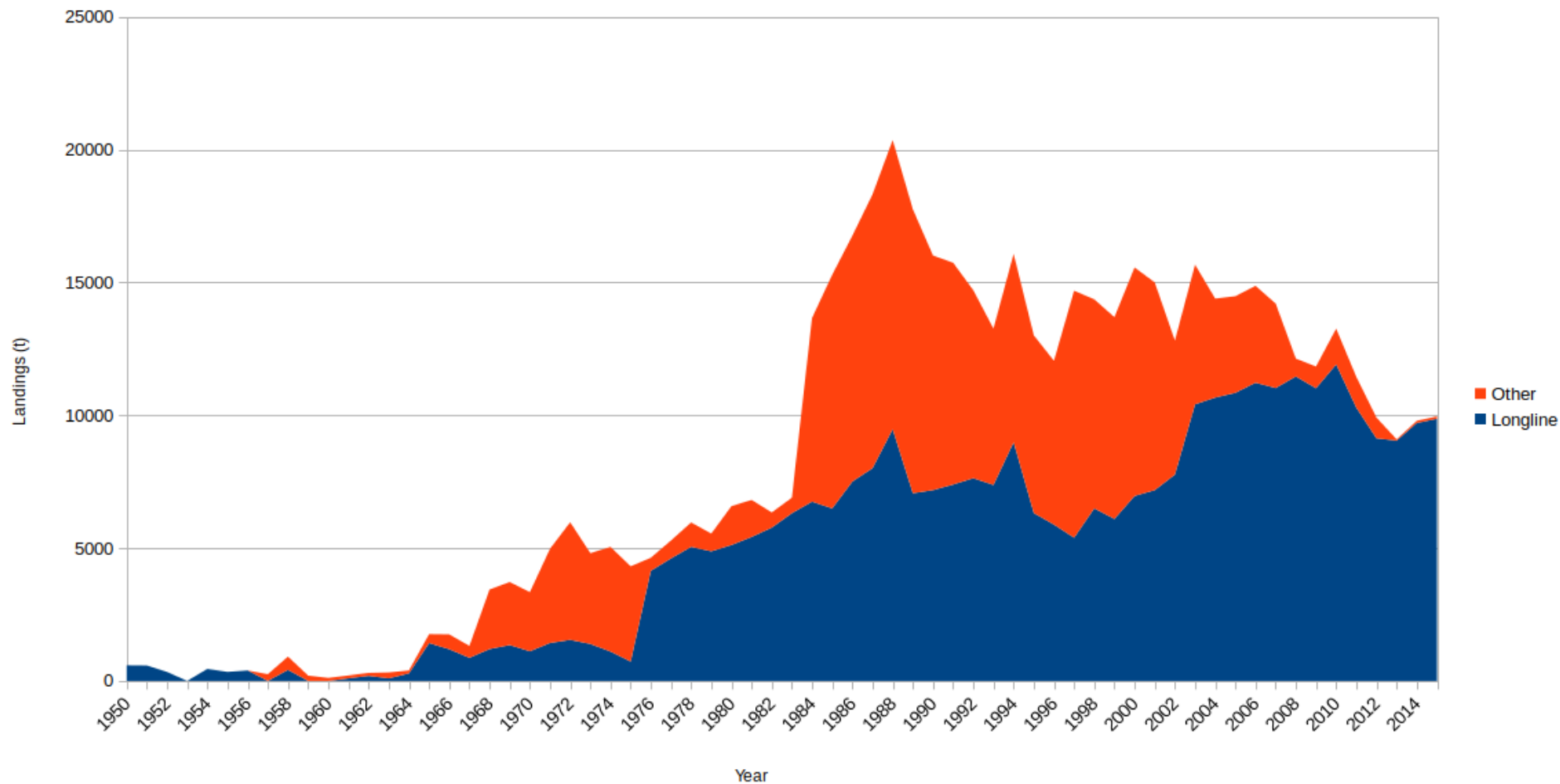
Overfished:
NO
Overfishing:
NO

- Stock status based on a **combination of model output and ancillary information**: total removals (1950-2011) for South have been lower than in North; mean SWO weight is larger in South.
- Assuming similar production dynamics, both indicators suggest a lower exploitation rate for South, and hence Committee believes that stock is not overfished

2016 MEDITERRANEAN SWORDFISH STOCK ASSESSMENT
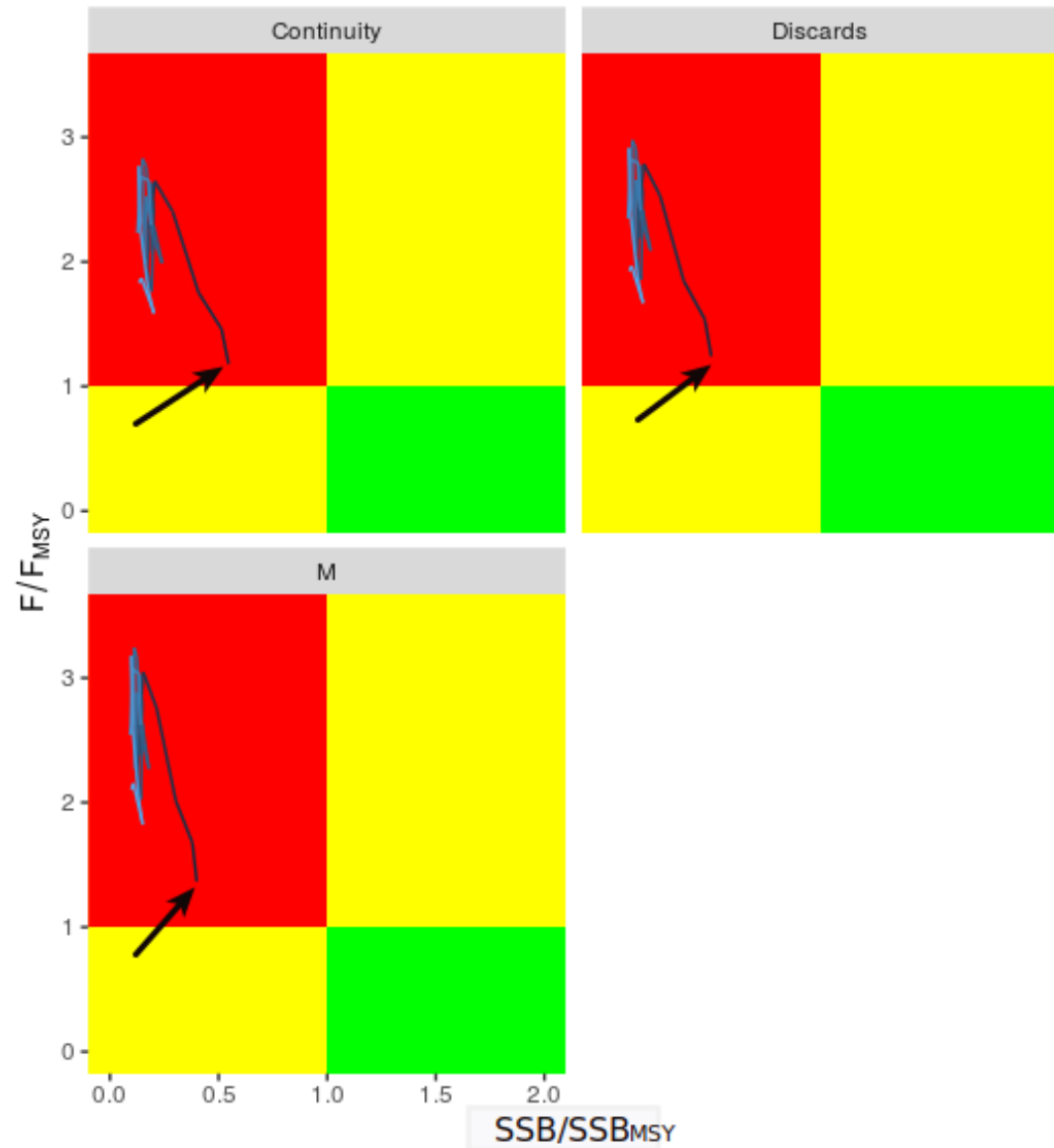
Med Swordfish catch

No TAC, 2015 catch= 10,068   MSY 19,700

Med Swordfish stock status

$F_{2015}/F_{MSY} = 1.85$
$SSB_{2015} / SSB_{MSY} = 0.12$
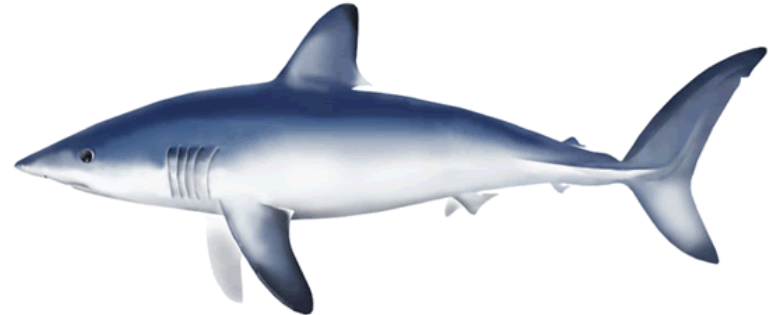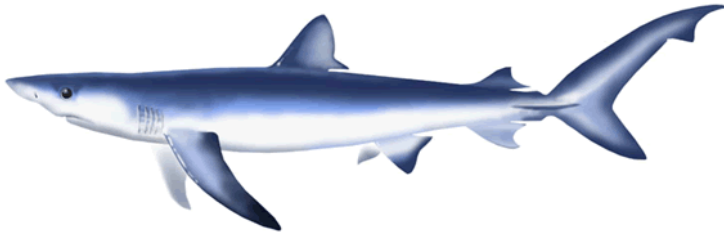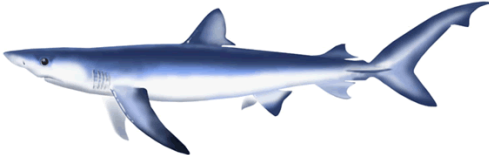
Overfished: Yes
Overfishing: Yes

SSB/SSBMSY and F/FMSY) from 3 XSA runs. (Continuity=constant natural mortality, assume discards 4 zero-age fish/t, M vary with age). Arrows indicate beginning of model time.
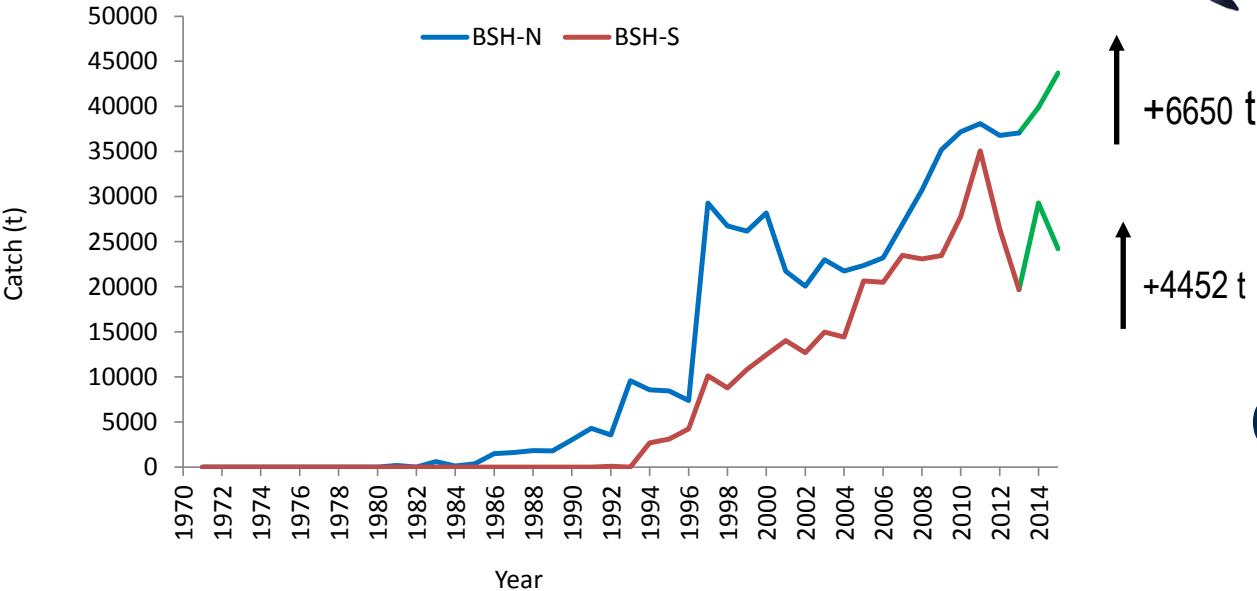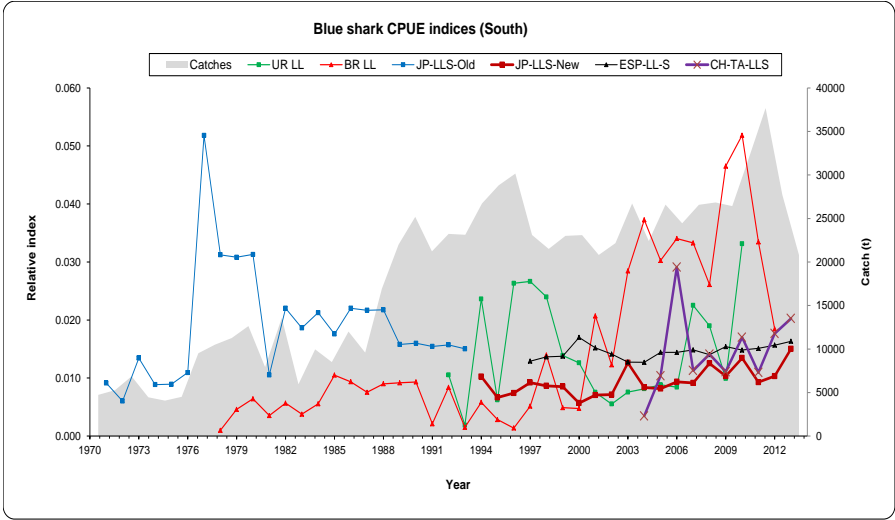
Sharks

Blue shark: catches and CPUE

2015 assessment

Catches

+6650 t

+4452 t

Blue shark CPUE indices (North)

North Atlantic

Blue shark CPUE indices (South)

South Atlantic

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Blue shark: stock status

North Atlantic

Overfished: Not likely

Overfishing: Not likely

South Atlantic

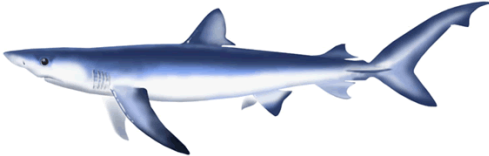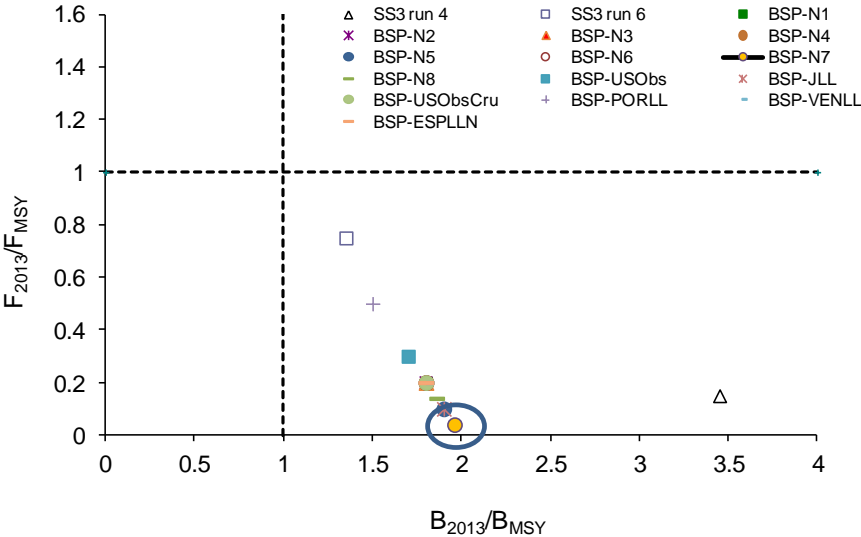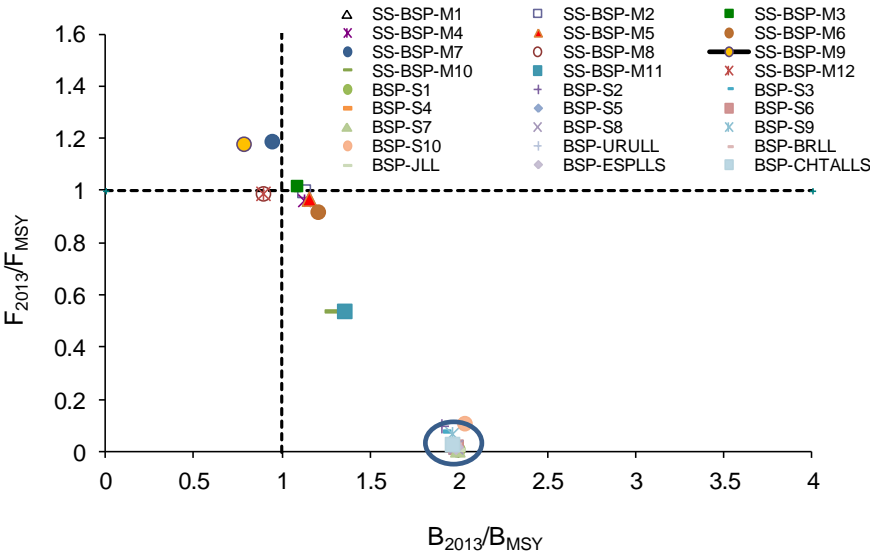Overfished: Unknown

Overfishing: Unknown

Shortfin mako: catches and CPUE

2012 assessment

-918 t

+107 t
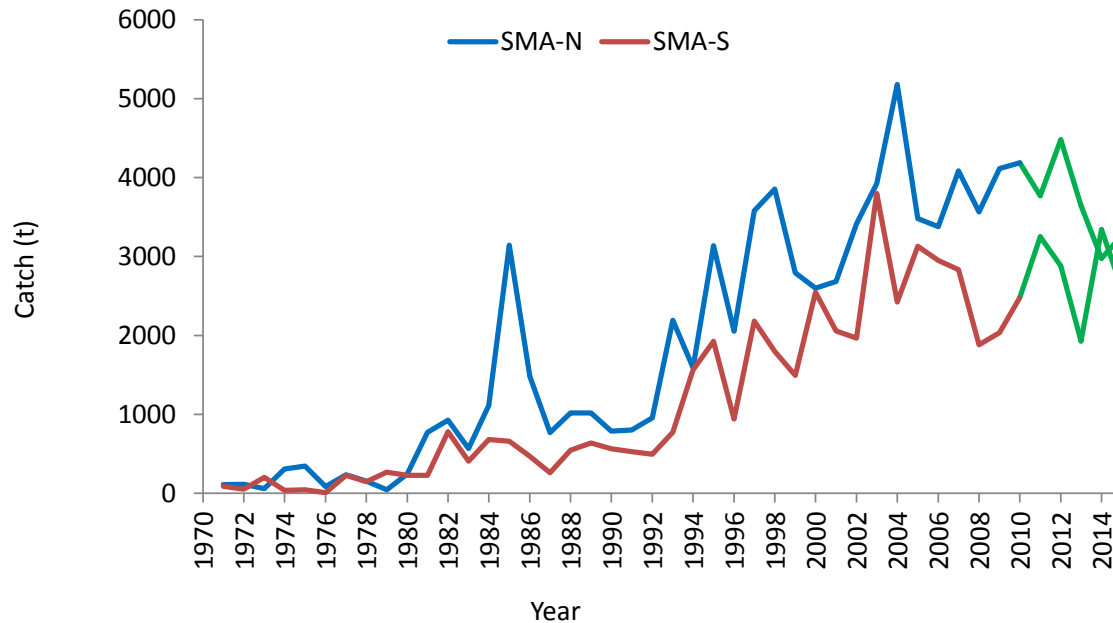
Catches
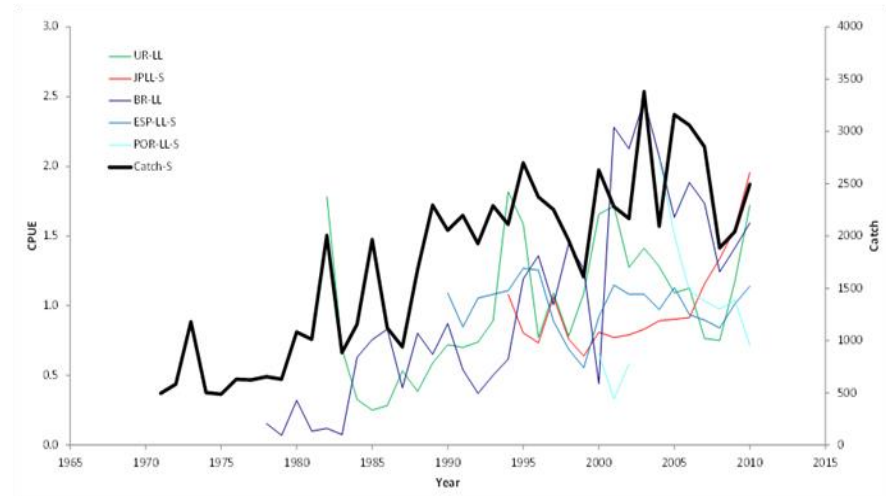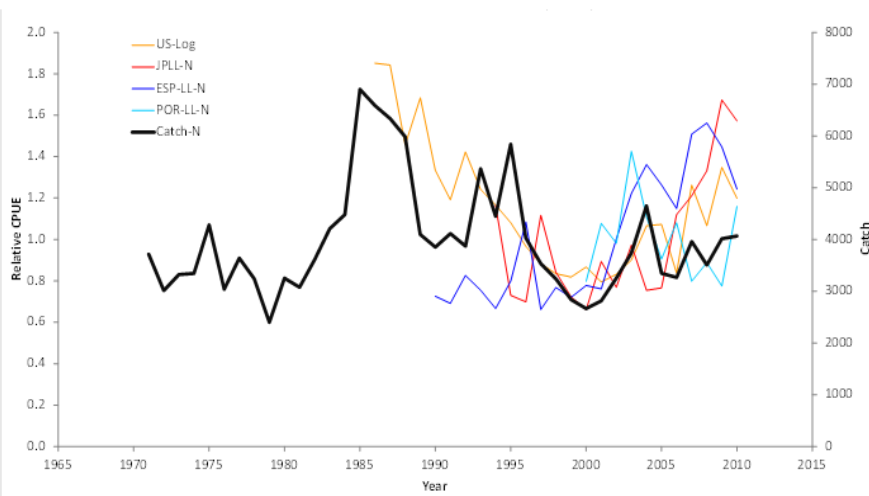
North Atlantic

South Atlantic

Shortfin mako: stock status (new assessment in 2017)
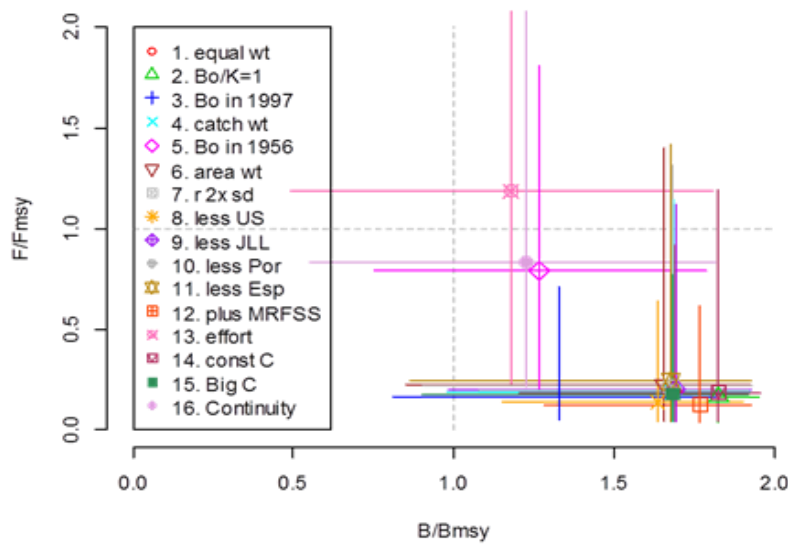
North Atlantic

Overfished: Not overfished
Overfishing: No overfishing
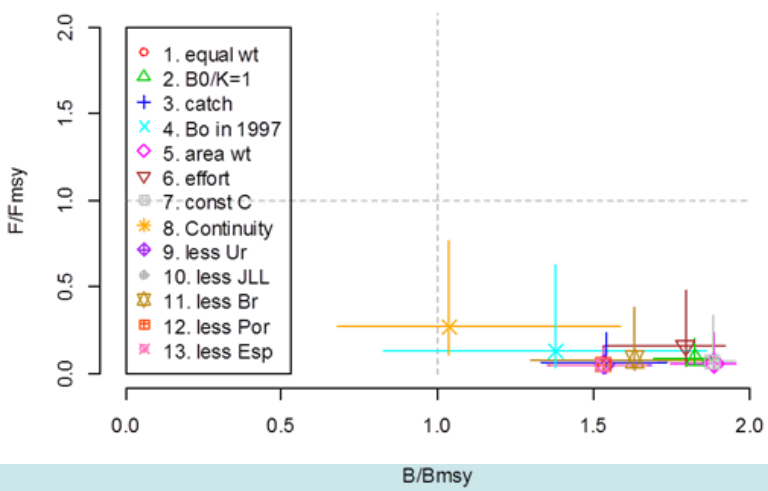
South Atlantic

Overfished: Not overfished
Overfishing: No overfishing

Porbeagle: catches and CPUE

2009 assessment

Northwest Atlantic

Catches

CPUEs

Porbeagle: catches and CPUE

2009 assessment

Northeast Atlantic

Catches

CPUEs

Porbeagle: catches and CPUE

2009 assessment

Southwest Atlantic
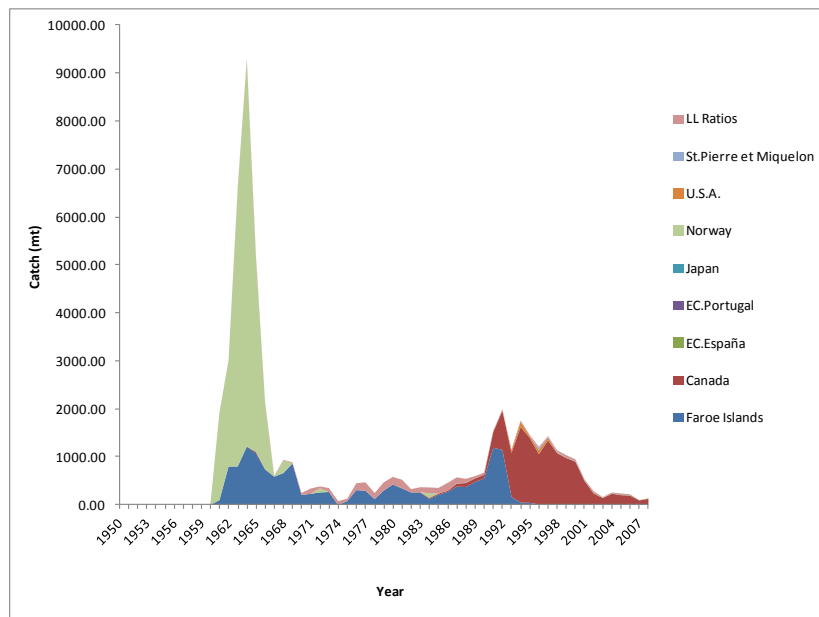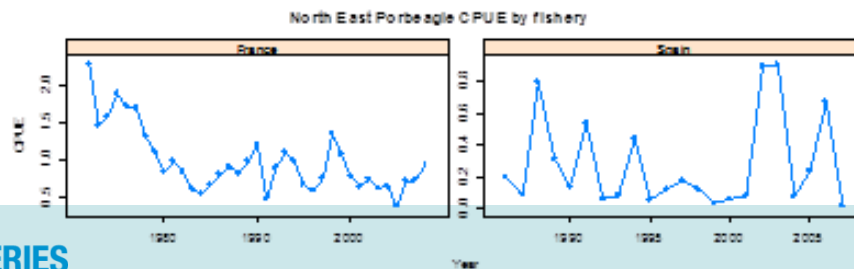
Catches

CPUEs

NOAA FISHERIES

Porbeagle: stock status

Northwest Atlantic

Overfished: Overfished

Overfishing: No overfishing

Northeast Atlantic

Overfished: Overfished

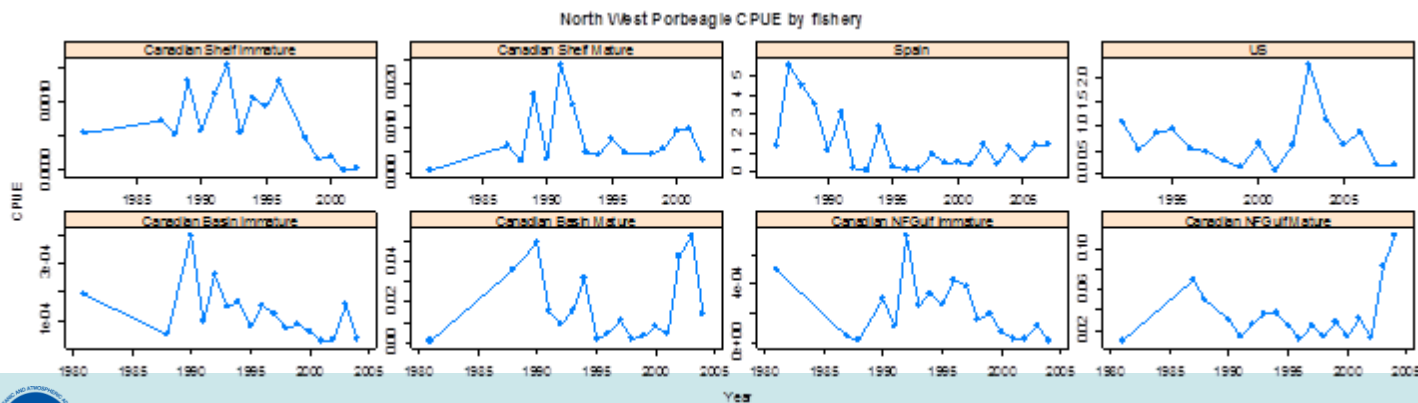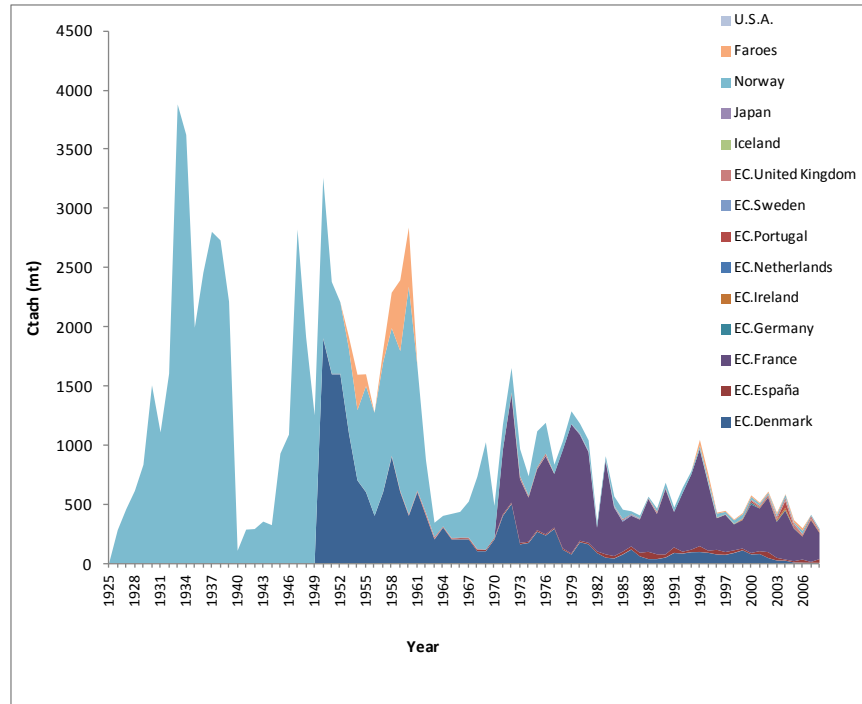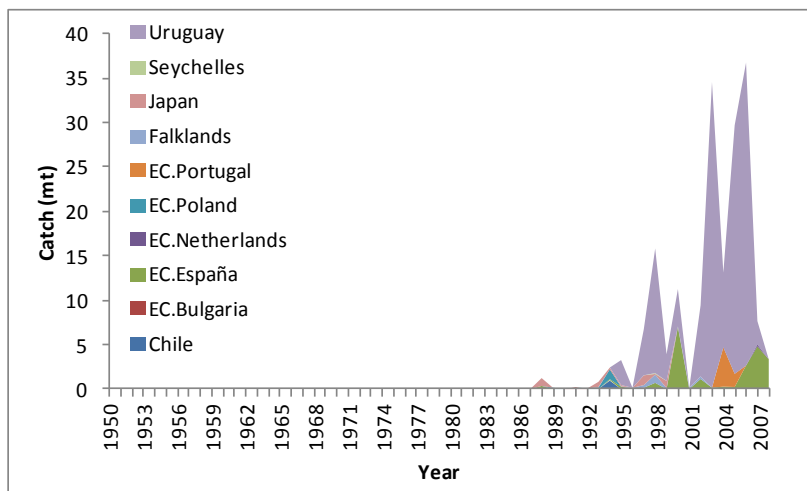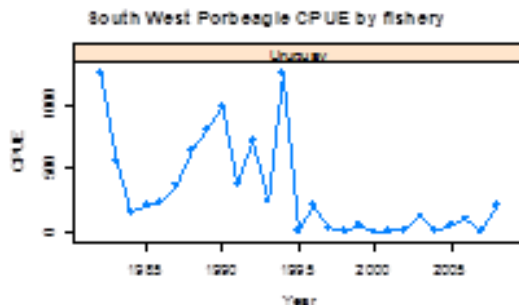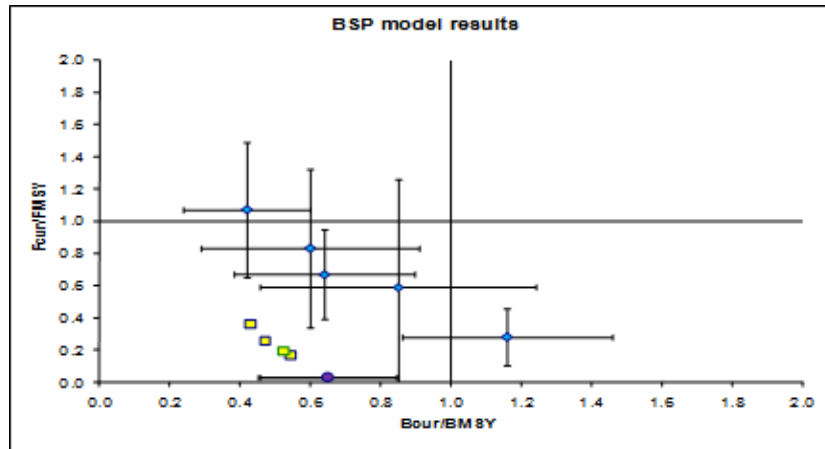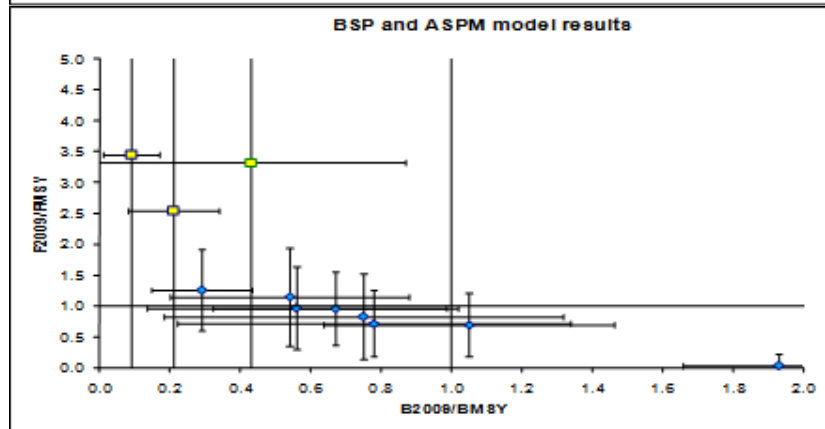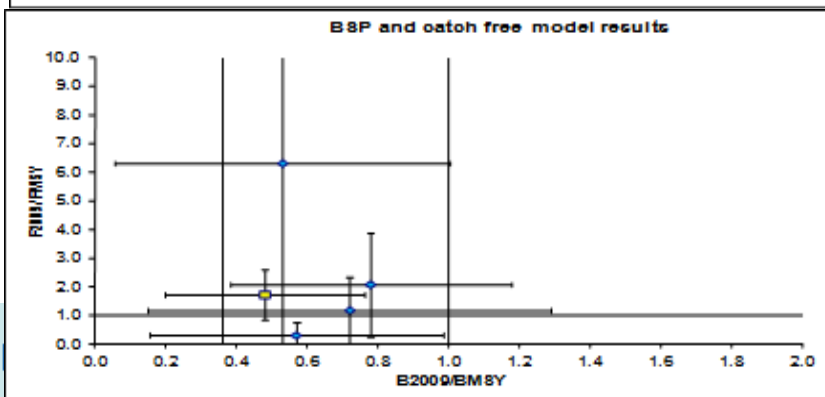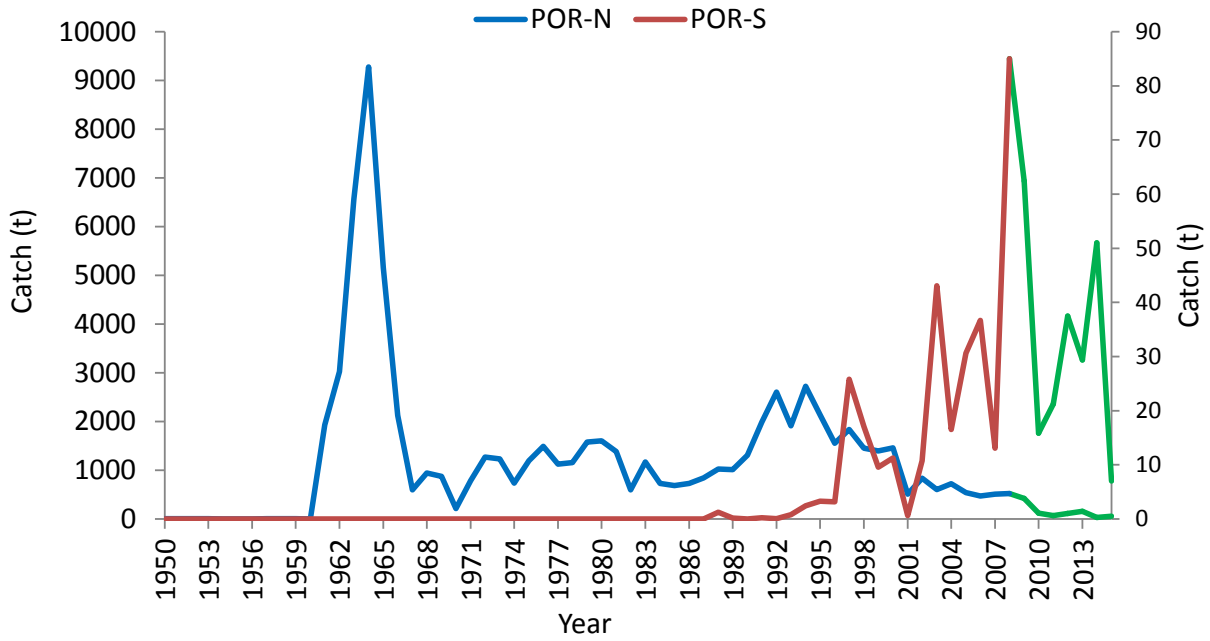Overfishing: No overfishing

Southwest Atlantic

Overfished: Overfished

Overfishing: Undetermined

Porbeagle: catches

-467 t

-78 t

Catches

2017 SCRS Calendar

	SAT	SUN	MON	TUE	WED	THU	FRI	SAT	SUN	MON	TUE	WED	THU	FRI	SAT	SUN	MON	TUE	WED	THU	FRI	SAT	SUN	MON	TUE	WED	THU	FRI	SAT	SUN
January		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
February			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
March			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
										BFT Data Prep (a) →																				SMA Data Prep (b)
April						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
									SWO Data prep (b) →																	SMALL TUNAS (c)
May		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
									WGSAM (d) →																				
June			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
									ALBACORE (e) →									SMA Assessment (e) →										
July	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	SWO Assessment (f) →						SC-ECOSYSTEMS →										BFT Assessment (g) →										
August			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
September							1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
									TROPICALS →																SPECIES GROUPS
October		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	SCRS Plenary →																										
November			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
December							1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

Invitations were made by various CPCs to hold meetings in: (a) Mallorca, Spain; (b) Cape Verde; (c) Miami, USA; (d) Pasaia, Spain; (e) Tenerife, Spain; (f) TBA, Portugal; (g) St. Andrews, Canada

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